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AVIATION

The Oldest American Aeronautical Magazine

JANUARY 2, 1928

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Flying boat racing the "Yankee Doodle" at the National Motor Boat Races, Baltimore, Md.

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XXIV

Special Features

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And What of 1928?
Looking Back at 1927
1927 Commercial Production

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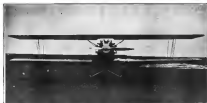
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The Consolidated Husky, Designed and Constructed by Consolidated Aircraft Corporation.

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BUFFALO, NEW YORK

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COLONEL CHARLES A. LINDBERGH

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17.



The above picture was taken August 19th, 1931 at Kansas City Airport just after Col. Lindbergh completed a flight in an American Eagle.

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The "Wasp" and the Cabin Plane

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AVIATION

The Oldest American Aeronautical Magazine

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The Spirit of St. Louis

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1928

A YEAR ago who would have dared to predict such feats as were actually accomplished in 1927 by American aviators? Who would have imagined the overwhelming public interest these feats aroused? Who could have foreseen the tremendous impetus given to American commercial aviation?

Landing fields have sprung up all over the country. Cities and towns have fought to be on the line of newly established airways. Government and private flying schools have been founded with requests for flight instruction. Factories have waiting lists of customers for planes.

Greatest of all—the rank and file of America is becoming air-minded!

How shall we use this rich legacy of 1927? How can it be employed to the greatest advantage of commercial aviation in 1928? It is well worth while to give this serious thought.

Let us show the public such a record of safety as will convince the most timid.

Let us show such progress in the practical application of flight to the needs of the business world that American business will think of the airplane in the same terms it now thinks of trains, ships and motor trucks.

Let us give every encouragement to the pioneer whose aims are the advancement of aviation. But let us discourage reckless publicity seeking.

Let us do everything in our power to further the cause of service aviation, knowing that each will benefit from anything which benefits the whole industry.

Let us make 1928 show an even greater advance over 1927, than 1927 showed over any year preceding.

The Stout Metal Airplane Company
DIVISION OF FORD MOTOR COMPANY
Dearborn, Michigan



The Oldest American Aeronautical Magazine

Vol. XXIV

JANUARY 2, 1928

No. 1

1928 -- Aerial New Year

TO EXPRESS the wish that 1928 will be an aerial year is not to wish for a happy one as well for it is one who are engaged in aeronautical work. It is, therefore, the wish of *AVIATION* that each one of its readers may enjoy an Aerial New Year.

Every sign points in the direction of prosperity and advancement. And what a even such important legislation and continuous optimism provide the whole aeronautical world. With such a spirit the aeronautical industry enters the closing period of the first quarter century of flight.

Next December the Twenty-Fifth Anniversary of the first flight of the Wright Brothers will be celebrated. The world will do homage to American inventive genius as represented by the aviators of a new art. By then the aerial harvest of the year will be in. The wish of *AVIATION* for all its readers is that they may gather these share of success to the fullest. Welcome to 1928.

The Engine Situation

AS EVERYONE knows the development of aerial aviation in this country has been almost entirely due to the stock of war surplus Curtiss OX5 engines which enabled manufacturers to equip their planes with extremely cheap but reliable engines. These engines have satisfied for as low as \$550 and in large quantities there were certain aims for less than one hundred dollars. At the present time these engines are being held for prices of \$700 with the expectation that they will shortly go higher. An exact census of the stock on hand is not available but various people who should know estimate the stock in the hands of the larger manufacturers as between six and eight hundred while the number of new OX5 engines in the hands of small manufacturers and dealers is purely guess work but undoubtedly considerable. There are also very considerable stocks of used OX5 engines and quite a few Hispano-Suiza engines most of which are being closely held.

These estimates may be wrong \$1000 one way or the other but there is no doubt that next year will see the almost complete exhaustion of war surplus engines and the substitution of modern engines which will undoubtedly be more expensive and which will have a greater price in the price of the three motor planes of at least fifty per cent. over present prices. This may cause a temporary check in the sale of planes but in the long run it will be highly advantageous. It should be remembered

that the Jetter was replaced by planes costing four or five times as much and that the better operators made more money out of the more expensive planes. The same thing will hold true if a good commercial engine of lower power is developed. Not only will the planes equipped with these lighter engines be more efficient but the maintenance, the endurance and the reliability will be as much increased. Then in the long run they will be considerably cheaper to operate than the war surplus engines.

Cross Country Flying

NON FLERESE apparently motorists are usually recalled that aviators no cross country flights are so apt to get lost. To their mind and even to the mind of many who have flown, the scrub from the air is laid out like a gigantic map. This is so on clear days but often the particular piece of ground that one sees is so hard to fit into the small scale map as are the pieces of a pig saw puzzle. On foggy days however there is practically no resemblance between the actual features that are marked down on a map and the mass of busy detail which is viewed from an airplane. Paradoxical as it may seem, an aviator often loses his way because he sees too much and no single feature sticks in his mind. The motorist sees only the features on either side of the road and it is easier to pick out and remember individual objects. The aviator when he can see at all has such a wide vision that it takes special training to pick out special features which can be identified or remembered. It must also be remembered that in some places part of the landscape is cut off by the wings or fuselage and that the higher the plane the greater is the extent that is cut off.

The faculty of picking out or remembering features in the landscape can be improved with practice and some people undoubtedly have a natural aptitude for the thing which combined with a sense of direction and keen moments almost to genius. Even the best and most experienced of pilots can get lost on cross country flights in clear weather. Poor pilots, in foggy weather, usually "sit down" in a few minutes if they are lucky enough to find one. When every hand and knee has an airport where a plane can safely stop and ask the way the problem will not be so serious. In the mean time many towns and factories are doing a useful work by painting names and direction arrows on the roofs of buildings.

Looking Back at 1927

A Resume of Airplane Activities During the Greatest Year in the History of American Aeronautics

LOOKING BACK at 1927, the year which in all probability will go down in the records as the greatest in the history of American aeronautics, Col. Charles A. Lindbergh's New York to Paris flight stands out unopposedly as the most spectacular feat of all. It was upon that famous pilot's arrival on the other side of the Atlantic that the aeronautist in this country first began to give serious thought to the possibilities of the airplane. And to these untold people, explored outside of the industry, that historic flight was perhaps the beginning of airplane accomplishments during the past year.

However, to make a complete resume of airplane endeavors, successful and unsuccessful, for 1927, one has to go back further than the date of Colonel Lindbergh's flight, to fast back to April 14, to be exact.

At noon on that day Clarence D. Chamberlin and Bert Acosta landed their *Bellevue* monoplane "Columbia" at Roosevelt Field, L. I., after having crossed in the air for 51 hr., 12 min., 25 sec. This flight constituted a new world's endurance record, breaking by 5 hr., 56 min. and 26 sec. the former record established by the French pilots Breus and Leandry at Etampes, France, on Aug. 7-8, 1925. Chamberlin and Acosta had taken off Roosevelt Field at 8:30 Tuesday morning, April 13, with a load of 185 gal. of gasoline and 20 gal. of oil. At the take off the plane carried a total useful load of 2680 lb. The *Bellevue* monoplane was designed by Giuseppe M. Bazzano and was powered with a Wright Whirlwind engine.

The next airplane feat of note was accomplished on May 2, when the Pan American fleet carrying a message of good will from President Coolidge to the Latin-American countries, had completed their 28,000 mi. flight at Dallas Field, Washington, D. C. The flight started Dec. 21, 1926 from San Antonio, Tex., and continued down the coast of Mex-

ico across the Isthmus of Panama Canal to Panama with stops at El Estero and Nicaragua. From Colon the flight went to Colombia and then returned to the Canal Zone and continued along the west coast of South America as far as Valdivia, Chile, where the *Avian* was moved to the Atlantic side, to Balboa-Riohacha, Argentina. Following the east coast the planes flew to Buenos Aires and made a 1,400 mi. round trip up the Parana River to Asuncion, Paraguay. Next came Brazil,



Gen. Richard E. Byrd's plane "America" being prepared for its great flight across the North Atlantic.

the Guianas and Venezuela. At Trinidad the flight left the mainland and made a series of hops which covered the islets Antilla, Petite Nere, the Boucanne, Royale, Haiti, Cuba and the return to Langley Field, Va., and Bolling Field, Washington. Five Leaning Amphibian planes (Latham design) under the leadership of Maj. Herbert A. Dargue started the flight, but due to a fatal accident in Belem, Brazil in which Capt. Charles F. Wadley and Lieut. John W. Butler were killed, only four of the planes returned to the United



The four Leaning Amphibian airplanes of the Pan-American flight lined up at Bolling Field, Washington, D. C.

States. The planes that made the complete trip were, the *New York* (Zui-Maj) Herbert A. Dargue and Lieut. Elmer J. Whitcomb; The *San Antonio*—Capt. Arthur B. McDonald and Lieut. Charles McK. Johnson; The *San Francisco*—Capt. Ira G. Fisher and Lieut. Mear S. Fairchild; and The *St. Louis*—Lieut. Edward S. Thompson and Lieut. Leonard J. Worthington. Upon arrival of the fleet at Bolling Field,



The famous "Spirit of St. Louis" en route from Paris, France, to Brussels, Belgium.

they were all received by President Coolidge with the distinguished Flying Cross which has been voted by Congress. Testimonial words of the Distinguished Flying Cross also were made to the aviators who did not return.

The next aviation achievement, the greatest of the year, was Colonel Lindbergh's 3616 mi. non-stop flight from Roosevelt Field, L. I., to Le Bourget air field near Paris, France. This flight, which was made in 33 hr., 29 min., 26 sec., at an average speed of 308 m. p.h., was started at 6:52 A. M. Friday, May 20, and was completed at 10:28 P. M. (Paris time) Saturday, May 21. So much has been said and written of this great flight that a resume would be mere repetition of daily conversation. However, as a matter of record the great record journey was made in a Ryan monoplane, the "Spirit of St. Louis", powered by a Wright Whirlwind engine. At the take off of the trans-Atlantic flight the *Spirit of St. Louis* had over three times its own weight of 312 times its empty weight to be exact. The empty weight of the plane (which spaced approximately was 1,085 lb., and the gross weight was 3,508 lb.; empty but complete with instruments and special loads the plane weighed 2,150 lb. Its useful load with 50 gal. of gasoline, pilot, etc., was 2,085 lb. or 2.22 times the empty weight. The plane which was built according to Col. Lindbergh's specifications was constructed in less than 4 days. Prior to his start from Roosevelt Field, Colonel Lindbergh flew the plane from San Diego to Roosevelt Field. It was stopover at St. Louis, where the plane was checked, in a total flying time of 14 hr., 3 min. In making this flight the famous air mail pilot won the Gilling prize of \$500,000 which had been offered by Raymond Gering. On Memorial Day Ward T. Van Orman won the National Million Race for the third time and gained permanent possession of the Litchfield cup. Van Orman had as his aid W.

W. Marlowe and together they piloted the Goodyear Rubber Co. entry from Akron, Ohio, to a nearby beach near Bay Harbor, Me., a distance of over 715 mi. E. J. Hall and his aid A. E. Scholander in the Detroit Flying Club No. 3, repeated the record prize when they came to earth at Scarborough, Me., after covering a distance of about 600 mi. Third honors went to Captain Knappe and his aid Lieut. W. O. Ruckelshaus in the Army Knary 2, which came to earth at Biddeford, Me., after a flight of about 595 mi. These three leading contestants were selected to represent the United States in the Gordon Bennett International Balloons race which on account of Van Orman's victory in 1926, was held at Detroit on Sept. 18. Fifteen balloons took part in the championship race and included four Army, three Navy and 8 civilian entries.

Ready to take off for a trans-Atlantic attempt by Colonel Lindbergh in the *Spirit of St. Louis*, Clarence D. Chamberlin on Saturday, June 4, took the endurance record breaking plane "Columbia" off Roosevelt Field and started a long distance flight of 1,800 mi. Chamberlin carried Charles A. Levine as a passenger and in 43 hr. they flew from Roosevelt Field to Haffa, Germany, where they landed at midnight, Sunday, June 5, and established a new world's record.



Clarence Chamberlin and Charles A. Levine shaking hands prior to the start of their non-stop flight in Germany.

Long distance record. Their ultimate goal was the city of Berlin but a shortage of gasoline brought about the landing at Haffa. After taking as fuel Chamberlin took the Columbia into the air again but owing to the engine knocking been put out of commission by the forced landing, and going astray in bad weather, a second failed landing was made in a marsh near Kottbus, Germany. Later when repairs were made the flight was continued in the German capital. The plane took off with a total of 155 gal. of gasoline

and the total weight of the plane was approximately 3,500 lb.

On June 23, Southern planes took off from the Ford Airport at Detroit, Mich., to start the 1825 National Air Tour. The 3,500 mi. route taken was from Detroit to Buffalo to Chicago, Indianapolis, Boston, Hartford, New York City, Philadelphia and Baltimore. From this point the route doubled back across the mountains of Pennsylvania to Pittsburgh and thence to Cleveland, Columbus, Dayton, Cincinnati, Cincinnati, Louisville, Memphis, St. Louis, Dallas, Oklahoma City, Tulsa, Wichita and Omaha. From that point the route went west to Moline, Hammond, Grand Rapids and on to Detroit. The Tour ended on July 19, and was won by a Stinson-Detamore monoplane, piloted by Eddie Stinson. Stinson's point score was 883.7. A Hamilton monoplane piloted by Randolph G. Page was 2nd place with a total of 7603.5 points, and a Montgomery biplane piloted by Harvey C. Monneret was 3rd place with a total of 3467 points. The first and second place winning planes were powered with a single Wright Whirlwind engine and the third place winning plane was powered with a Curtiss O-6A engine. Of the 14 planes which started out were withdrawn for personal reasons while another was seriously delayed by engine trouble and it was disqualified for the prize money although it completed the tour. The regularity with which the competitors completed the 35 legs of the Tour was a wonderful demonstration of the reliability which has been achieved by modern airplanes and engines handled by experienced pilots.

The next series event of importance was again, shortly after 9 o'clock on Tuesday morning, June 28, when Lester J. Matfield and Albert Hagenberger scored over the air with a three engine (Wright Whirlwind) Fokker Army transport from the runway of the Oakland Municipal Airport in California and landed west of the Hawaiian Islands some 3,400 mi. away. Exactly 22 hr., 15 min. later the large plane was glided down in a perfect landing on Wheeler Field, Island of Oahu, Hawaii. Thus for the first time in history the American mainland and the Hawaiian Islands were successfully connected by air, and solidly linked was the establishment of a new world's record for an air trip, distance flown over open water. The runway at Wheeler Field is only 6700 ft. long, and according to official Army observation the Fokker plane took the air after a run of approxi-

mately 6,000 ft. Lieutenant Matfield headed the plane on; after the Golden Gate as soon as he had left the ground, as; after the mainland had passed out of view as land was sighted for 50 hr. When they did again land it proved to be in Island of Kure southeast of Oahu Island of the Hawaiian group on which they landed.

While the Fokker Army transport plane was winging its way across the Pacific stretch, another three engine (Wright Whirlwind) Fokker monoplane, "The America" commanded by Const. Richard E. Byrd, took off from Roosevelt Field



Fokker Air plane "Whirlwind" piloted by Arthur C. Doehel from California to Hawaii.

bound on-stray to La Bourgen Air Field. The date and time of the next take off was 3:24 A.M., June 28, and at 2:30 A.M. (French time) July 1, the plane was landed in the sea some 230 yd. from shore near Van-ter-Mas, France. Accompanying Commander Byrd were Bert Acosta, pilot; Louis G. O'Neill, flight engineer and Ernest Belcher, radio man. Together his four men had not yet 15 hours in the air. Landing and took off La Bourgen, but after being in the air for over 48 hr., 18 of which were spent on fog out of sight at land or water, and the last 5 being spent groping blindly through pitch darkness over French soil in the search of a suitable place to land, they successfully landed their three-engine biplane in the water off the French coast, and then made their way to shore by means of a rubber life raft. After spending the night at the guests of the city of Cass the screen was then taken to the city of Paris where they re-



Lt. C. C. Chapman, Jr., U.S.N., coming in with the Navy "Apache" ("Wasp" appeared) after establishing the World's airplane altitude record of 37,265 ft.

with little modest attention as was necessary after a record attempt.

The take off from Roosevelt Field which was made by the way perfect and exacting the weights of the four men total load of the plane was more than 7 tons or close



Lester J. Matfield (left) and Lester J. Matfield who flew from California to Hawaii.

to 10,000 lb., most of which was accounted for by the 3,500 lb. of gasoline in the tanks. The plane took 45 sec. to run the 2,200 ft. before it got into the air. In a fall head first it had made a take off at 27 sec., but then Acosta had allowed the plane to carry itself into the air. The landing in the water was made by Bert Belcher, who had some time before released Acosta to the controls. Commander Byrd was the last to leave the plane and he took with him the mail, and part of the Berry Race flag which he was to present to President Domergue of France, and as many of the charts and technical notes as he could remove.

On July 1, Lt. C. C. Chapman, Jr., U.S.N., established a new world's altitude record for an airplane, when he reached a height of 37,265 ft., in a Navy "Apache" biplane fighter equipped with a Pratt & Whitney "Wasp" engine. A 100-hp. supercharger developed by the N.A.C.A. at the experimental station Langley Field, Va., was used in conjunction with the Wasp engine. In the search of a new record, a record was made by the Fédération Aéronautique Internationale that the world's altitude record for airplanes had been awarded to Lieutenant Chapman. This record of 38,675 ft., was made by Lieutenant Chapman on July 25, 1931, and was designated as the official altitude record when the F.A.I. awarded the name of Caillois, the French pilot, from its list.

After once having been forced to abandon an attempt to fly from California to Hawaii, Ernest L. Smith and Emory B. Straute took off from Oakland Airport, Calif., at 10:45 (Pacific time) Thursday, July 11, in a single Wright

and against Travel Air monoplane and landed at Wheeler Field, Oahu on route for Wheeler Field, Hawaii, where Matfield and Hagenberger had landed. However, after flying for 25 hr., 26 min., the three were forced to land on the beach of the island of Maui, 20 mi. southeast of Wheeler Field and 2,500 mi. from their starting point. They marked the second successful crossing of the Pacific Ocean and had it not been for the complete exhaustion of the fuel supply which necessitated the forced landing Maui and Hawaii would undoubtedly have carried on to Wheeler

Field to make an exact disposition of the Army flight.

The take off from Oakland was delayed for three hours due to fog and a false start when the plane hit a rut. Fog was then encountered for almost the entire trip, and the first land sighted after leaving the American mainland was the peak of Mount Lanai on the Island of Hawaii. After their course the three headed for Oahu and Wheeler Field but the fuel gave out at Maui. The landing was made in the trees on the beach considered it less dangerous than to try to land in the cove. The plane was damaged beyond all hope of repair, and only the engine and instruments could be salvaged.

On July 18, after having returned to his native country where he received the high tributes of the individuals, organizations and government bodies alike, Col. Charles A. Lindbergh left New York for an aerial trip, in the Spirit of St. Louis at the 80 miles of the Ocean. The tour which was commenced under the auspices of the Daniel Guggenheim Fund for the Promotion of Aeronautics, Inc., was completed with Col. Lindbergh's return to New York City on Oct. 23. On the tour he was accompanied by a Fairchild three monoplane belonging to the Department of Commerce and piloted by Lindbergh, Philip G. Lawrence. The total distance of the tour was 30,000 miles and the total number of hours spent in the air was 353. During this time 33 state capitals were visited, a total number of



Emory B. Straute (left) and Ernest L. Smith, first aviators to make the California to Hawaii flight.

13 beach stops were made, a total number of 49 beach stops were made and on only one occasion was the New York plane pilot late in arriving at a designated point. It was estimated that over 200,000,000 people saw the plane and during the tour both planes performed perfectly, there were no accidents, no forced landings and no delays of any kind from mechanical difficulties. The Spirit of St. Louis was powered

(Cont. on page 32)

And What of 1928?

Continued Development of All Phases of Aviation, Particularly Airports and Engines Will Make for Year of Prosperity

FROM WHATEVER angle we look at it, 1927 has been a banner year for aviation in America. The war had under previous operation has shown a most healthy growth and has proved that, under proper modification and management, air transportation can be made a profitable venture. Aerial service operations and airlines in almost have done a head office business. Manufacturers of commercial planes were so far young in their best master's estimate of production that they have had a hectic and hard working year catching up to the demand, but otherwise no one would so feel sorry for them. Next, but still not least, the man-



Pan American Pacific (right) of San Francisco entering in 27. E. Roring, president of United Air Transport, on ground Air Mail carrier at San Francisco, July 1, 1927

ufacturers of military aircraft have received large orders and what is more important the action has been given out as a fashion which has tended to stabilize the industry.

But what of 1928? Will there be another Langford boom or will aviation wing its way to the front through a less turbulent progression? These questions may be answerable by the dead but those of us who are alive will have to wait for the passing of another 365 days. There are however certain factors in the situation which developed during 1927 and which are bound to affect the situation during 1928.

Though not spectacular, one of the most important features in the development of airports which has been going on at a very rapid rate throughout the year. Numerous towns which in 1926 were without landing fields now have airports. Not only will this encourage local flying and create an increase in the demand for planes and pilots, but it will make cross country flying much easier and convenient. Every airport developed during 1927 will create a demand for new planes and the planes already in service will have a greater usefulness as there are more places that can be landed at.

The knowledge that there are landing fields about the route at which service can be obtained and at which emergency landings can be made will be a great encouragement to those who are contemplating cross country flights. Landing fields will have the same effect on air traffic as good roads and

passages have had on the popularity of automobile. The landing fields built in 1927 will have their effect on the air and demand for planes in 1928.

Although in the long run flying would have established itself through safety and confidence there is little doubt but that the spectacular flights of 1927 have greatly increased the interest which has to be overcome in the establishment of a new industry as method of transportation. The enthusiasm of 1927 can not compare at as high a pitch during 1928, but there is every reason to believe an intense interest in aviation will continue in 1928. The public at large has gradually acquired some knowledge of flying and the flying fraternity will perhaps have to spend less time in answering suddenly demanded questions. Flying has an actual bearing and meaning to many more people on Jan. 1, 1928, than it did on Jan. 1, 1927, and there is bound to be a wider application of its advantages.

Two movements have shown in popularity during 1927 which should increase the demand for aircraft. The first is the formation of flying clubs which own planes and in which the members not only have the advantages of pleasant companions but also get their flying at considerably lower rates. These clubs differ fundamentally from the flying clubs and associations of previous years in that they are presently designed to give members an opportunity to fly more easily and under pleasant circumstances. In England such clubs have greatly stimulated private flying and it is hoped that the club idea will have the same effect here in 1928.

The second movement is the great extension of the building of model airplanes and gliders which has been carried on



Front quarter view of the Ireland 'Vigilant' showing its notable development of five engines

by the various boys clubs throughout the United States. The effect of them may not be so manifested in 1928 but it certainly will have an influence on future years when the boys grow up.

The unexpectedly large demand for planes in 1927 caused all established manufacturers to expand their facilities, and it brought out a whole crop of new entrants in the field. The new firms have had a hard struggle for though they could

find their places as fast as they could produce them. Their lack of experience prevented them from living up to the standards which they have laid out. Also many of the newer planes had not been tested thoroughly enough and often their design was at fault and in the rush to produce planes they overlooked many details which only actual use could bring to light. Though the older manufacturers suffered from these same troubles they were affected to a lesser degree and as 1927 is now over the experienced manufacturers view as



Side view of a Waco 11 powered with a Paradox Continental engine

a stronger relative position at the end of 1927 than at the beginning. This is especially true among the manufacturers of planes but OX-5 engines which had several years of experience in manufacturing.

The year of 1927 brought aviation manufacturers low to produce commercial planes in considerable quantities and it also brought the attention of financial interests to the fact that there was a considerable demand for planes. Existing concern in 1928 will do it easier to raise money for new planes but it would not be surprising if 1928 brought several automobile manufacturers or other large concerns into the aviation field. It is almost certain too that several concerns which have been manufacturing military planes exclusively will turn their attention to the construction of new commercial planes.

The most serious problem facing the manufacturers of commercial aircraft was the question of engines. The demand during 1927 used up the stock of low powered war surplus engines much more quickly than had been expected and there is little doubt that before the end of next year the supply will be exhausted. The change from the cheap war surplus engines to modern engines will require a complete readjustment in the low power class, and it will require good planning and quick action to meet the situation. It is probable that the engine situation in 1928 will be determined by the manufacturers of planes but by 1928 the situation should be solved and very much bettered. As the war surplus era is right out we shall see new planes designed around them. They will probably be three and four motor rather than the type which is most likely to come in the first in the six motor, advance models of which have appeared in 1927. When the stock of war surplus engines is used up planes will go with much on the basis of their horsepower and the all purpose plane will give way to one which fits a special need.

There are at least a dozen groups which are planning to turn out commercial engines during 1928 and several of these groups have received considerable backing. If these are successful it is certain about 1928 it is that there will be great

developments in the manufacture of commercial engines.

There is another development which has been indicated in 1927 but which will almost certainly take a prominent place in 1928 and that is the manufacture of commercial flying boats. This field has been practically dormant since the war and until 1927 practically all unpowered flying in this country was done in war surplus boats. In 1926 a few commercial airplanes were built and in 1927 the number increased to about forty or fifty. This demand for airplanes indicates that there is also a demand for flying boats and amphibians. Two concerns have started out amphibious flying boats during 1927 and there is little doubt but that 1928 will see several new concerns in the field and an appreciable production.

The turning over of the transcontinental air mail to private companies in 1927 and the extension of the federal law system brought about an economic development, which should continue in 1928. The operating experience gathered in 1927 will help the companies to do better financially in 1928. Besides, the further extension of the air mail system will bring a larger volume of business. The public has already shown its willingness to pay enough extra postage to make the air mail profitable and there is every reason to believe that the air mail will continue to grow and prosper in 1928. It is almost certain too, that the year will see appropriations by Congress and the extension of the air mail to foreign countries, notably Central and South America. This would be the first step of a development which would prove even more important than one indicated at home. Several passenger lines are being projected for 1928 and this development seems to be especially active on the West Coast. Whether passenger transportation in the United States has not proved a success but it is admitted that with a few exceptions the attempts have not been carried on under ideal circumstances and it may be that 1928 will develop a passenger line which pays its way and which can continue without subsidy.

From the business standpoint the operation of air lines in 1927 has been a period of accumulating experience rather



A Republic 'Pathfinder' (Whelan only) in the company of the War Industries Aircraft Company

than one in which starting progress was made. There has been an improvement in the construction efficiency of the planes but the value of air modern rebuilt engines has brought about an even greater improvement. During 1927 several operating companies adopted closed order mail planes with the idea of carrying passengers but on the whole these attempts have not met with unusual success, and it therefore seems to be a tendency to return to the open backed plane, especially for mail flying. The real disappointment feature of 1927 was the fact that there was little improvement in the

regularity of operation. Although the public has shown that it would patronize the air mail even with its present irregularity it is disappearing not to find some progress. On the other hand there has been a great amount of research going on in lighting, weather forecasting, directional wireless and in instruments, especially altimeters. It is hoped that new research will have found that 1928 will see the inauguration of blood flying as part of the regular schedule of aviation.

No Lighter-Than-Air Developments

As far as this country is concerned next year will not bring any definite developments into the field of large lighter-than-air craft but several large European dirigibles will be launched and work on our own large ship should be well advanced and the small metal dirigible may be completed by the end of the year.

From the technical viewpoint 1927 does not seem to have brought out much which will have a vital influence on the development of airplanes during 1928. The one exception is the development of the Hawkeye, Page did, which, if reports be true, has now been perfected to the point where it is possible it will fly three times as fast as it is there and in the next month it is to be given a very important improvement in the shape and efficiency of aircraft. 1928 will undoubtedly bring out several serious competitors for the Orville Wright Competition, and even if only two



A three 10 powered with a *Boeing-McCulloch* seven cylinder engine.

tail section is achieved, the year will mark considerable technical progress in the study of a very difficult problem.

As has been stated before 1928 may be termed one of financial development by some unusual achievement or new invention but even without such an unexpected intervention as took place in 1927 we may expect a progressive and progressive year during 1928. New airports will render a demand for planes and the volume of business should bring prosperity to the manufacturers. The demand for new commercial engines will create what amounts to a new and large branch of the aircraft industry. The new engines will enable around new and improved types of planes to be built and will put a premium on engineering. There is every reason to believe that the air mail will continue to expand and that it will be extended to foreign countries. As far as technical developments go it is impossible to make any definite predictions. On the whole it is safe to assume that the aeronautical trade can look forward to a progressive and prosperous year during 1928.

The Outlook for 1928

a column by Frank R. Smith, vice-president, Curtis Aeroplane & Motor Co.

WE STAND at the threshold of 1928, the twenty-ninth anniversary of the birth of aviation.

Looking back, we see the year 1926, in all branches of aeronautical activity, as one of preparation for a great future,—how far off in its development we could then anticipate military aviation was placed on a sound basis with the passage by Congress of the First Post-Office, Commerce, and Aeronautics Act, and commercial aviation was recognized by legislation establishing a Bureau of Aeronautics in the Department of Commerce.

Then 1927 followed with the Governmental support which was essential to lasting development.

"The year has proved to be all the great value of the Commerce Bureau under the wise guidance of Secretary MacFarland, not as a restrictive or limiting agency, but one operating primarily for the development of commercial aviation. The creation of new types of air-craft and water-craft engines made possible the development of new military aircraft in both Army and Navy, having performance unequaled in the world, and our facilities have been busy meeting in a commendable manner the demands of the services for aircraft."

"Commercial flying entered its phenomenal impulse through the transatlantic flight of Charles A. Lindbergh and his associates. The Civilian has become the inspiring genius of commercial flying. The factures have not been able to meet the demand for commercial planes."

"We find that in the beginning of 1928, for the first time in the history of aeronautics, a demand for aircraft exceeding the supply."

"The manufacturer of airplanes and engines is extending in many new organizations, well founded in sound production. These concerns individually will depend upon their engineering experience and their sound business management, and collectively upon their realization that they have entered an industry which the public will expect and support on direct proportion to the quality of their products and the collective public which is necessary to promote public confidence."

"It is gratifying to note the increasing strength and far-sighted management of the Aeronautical Chamber of Commerce which has become very properly the weather-vane of the industry."

"We hope 1928 with well-founded confidence that the industry will meet the public demand that American may continue to be 'First in the Air!'"

Industrial Survey Planned to Increase Air Transportation

THE POSTAL Service Commission of the Chamber of Commerce of Oklahoma City, Okla. is planning a survey of Oklahoma City industry to find ways in which shipping can save time and effort in the use of air transportation. O. N. Dale, chairman, has announced. Freight delivery, trade transactions, competitive transportation facilities and the possibility of increasing the small order business of department stores are a few of the points to be considered.

Breeze Flying Service Formed To Operate From Mills Field

WITH VANCE Breeze, former air mail pilot, now a San Francisco aircraft manufacturer, at its head, the Breeze Flying Service has been formed to operate from Mills Field, San Francisco's municipal airport.

Mr. Breeze has associated with him Paul Shepherd, Joseph Luman and several others, nearly San Francisco business men. A \$15,000 corporation is being formed to manage the firm.

The service has obtained the agency for the Waco planes for San Mateo and Santa Clara counties, California. Mills field is located in the former. One Waco ten has already been delivered, a second is expected soon and three others are being ordered.

The activities to be carried on at Mills will include only a freight wheel and passenger-carrying service at the field, with cargo service to be added later. Beside the Waco, the new line intends to operate two or more Breeze monoplane aircraft. A preliminary list of students has been compiled and other would be taken on during the summer.

For the present, Mr. Breeze himself and Mr. Schmitt, who is an old-time mail-pilot, will handle the instruction work. A pilot and a mechanic are maintained throughout the day at the field and with arrival of the new monoplane from the Breeze factory, 24 hour service will be provided. This mode of service by Mills field is similar to that which will be looked and the monoplane are equipped for night flying. Two pilots are kept on reserve, day and night.

The service is said to be the first in the west where air transportation is available continuously, day and night. Headquarters of the service will be at the Breeze factory, 271 Seventh Street, San Francisco, with active headquarters at Mills Field.

Maddux Air Lines, Inc., to Operate Ford Plane on L.A.-S.F. Route

INTERNAL ANNOUNCEMENT of a new passenger air line between Los Angeles and the San Francisco bay region, was made recently by Jack Maddux, president of Maddux Air Lines, Inc., Los Angeles, Calif. First scheduled passenger planes to be used. They have a capacity of 12 persons.

The announcement followed completion of a successful test trip on one of the new planes over the route between Los Angeles and San Francisco and Oakland, twelve passengers being transported over the 420 mile in 3 hr. 28 min.

Mr. Maddux dispensed announcement of the point at which the new line will begin its regular service.

"We will probably have stops at both Oakland and San Francisco," he said.

An Oakland's field is actually nearer the center of business in San Francisco than San Francisco's own airport, if the former serves San Francisco Bay by means of both direct from Oakland Municipal Airport, Oakland's regular station are hoped. Mr. Maddux will select their field as the business for his line.

The Maddux line is already operating two planes on daily mail between Los Angeles and San Diego, with scheduled passenger. He anticipated equally heavy traffic on the route between the southern city and the bay region. Ultimately, he anticipates operating a line from San Francisco Bay through to El Paso, Tex., by way of Los Angeles and San Diego.

Long Beach has been selected as headquarters for the op-

eration. This choice was made largely because of the good lighting at the Long Beach field, facilitating night landings. The line's shops are also to be established in Long Beach shortly.

Of his last flight north and return, Mr. Maddux said:

"The splendid speed record made by one plane on an average of better than 160 m.p.h. for the entire distance with a complete list of passengers—demonstrates that a regular first class daily service can be maintained with ease. One important trip to San Francisco and Oakland proved, too, that the conditions are very superior there."

"Both these southern cities have splendidly equipped fields. Their provision for weather reports and other conditions in



Two Ford-Stout planes used by Maddux Air Lines at Rogers Airport, Los Angeles, Calif.

the economical service operation are unquestionably the best in the west. The prospects for regular passenger loads between the north and southern California appear to be excellent.

"Of course, very shortly, as soon as another Ford plane arrives, our plans will be flying regularly from San Francisco Bay to San Diego via Los Angeles and soon thereafter all the way through to El Paso. We shall have at least half a dozen 12-passenger, all metal planes in operation within, I believe, a very short time."

Philadelphia Appointed to Draft Code Covering Airports

THREE PHILADELPHIANS, Maj. J. Sydney Owen, commander of the Twenty-eighth Division of the Air Service, Pennsylvania National Guard, Richard S. Fisher, chairman of the Aviation Committee, Philadelphia Chamber of Commerce, and Maj. Charles J. Wolfe, former commander of the National Guard Wing unit, have been appointed by the State Aeronautics Commission to draft a code of rules to regulate airports in Pennsylvania.

Lieut. P. R. Love Now With the Fairchild Airplane Mfg. Corp.

LIEUT. P. R. Love, formerly with the Department of Commerce, has joined the Fairchild Airplane Manufacturer Corp. Lieutenant Love will be in the sales organization of the Fairchild Company and will be a Fairchild cabin monoplane for his sales work. It will be remembered that Lieutenant Love accompanied Colonel Lindbergh on his recent Good Will Tour of the U. S. in a Fairchild monoplane belonging to the Department of Commerce.

Radio Direction Finding

An Important Item in Aircraft Navigation that Warrants Careful Consideration of Airline Operators

By LAWRENCE A. HYLAND

Radio Engineer
Article Five

RADIO DIRECTION finding is of such vital importance to aircraft as to deserve the most careful consideration from the operators of air lines. The sense of the word here is (1) direct the aircraft along airways which are characterized by direction, top or tailwind, weather and (2) advise the aircraft to determine accurately the location of the airport and effect a landing regardless of the condition of visibility. The directing of aircraft by radio has progressed to the point where it is a practical and valuable navigational aid. Several methods have been successfully developed to accomplish the purpose each of which comes under one of three general classifications:

- (1) The direction finder or radio compass.
- (2) The bearing.
- (3) The beam.

It should be stated at the outset that, as may be expected, the problems of ground direction finding installations are all present in suggested form in aircraft. For the reason stated in the direction which shows satisfactory performance for ship and where such use of doubtful value in an airplane.

European Countries Has Service Faults

The various European practices as to how the bearing taken on an aircraft by a ground station after which the information is transmitted to the aircraft. This method has serious faults. Where the ground station takes and transmits the bearing only one aircraft can be served at a time. A suitable interval must elapse between the request for bearing and its final receipt by the pilot. At short distances there are very rapid shifts in direction due to the speed of the plane and it is frequently the case that the bearing is worthless by the time it has been received on board the plane. Yet an airplane requires its most accurate bearings when within twenty-five miles of its destination when the shift is most rapid. Skilled operators on the ground and in the air make the European radio bearing provision of first ability provided the planes arrive at the airport at intervals of not less than one half hour. Where several craft arrive within a short period, however, confusion is bound to ensue. An aircraft of skill will persist attempts to determine satisfactorily the direction of one of several aircraft, each of which is attempting for service and one of which may overtake the station if compelled to wait for his turn. This direction will, therefore, be confined largely to methods which indicate directly to the pilot what the bearing is, the ground station being used merely as a known reference point marking radio waves instead of light waves.

The direction finder or radio compass is a receiving device

which makes use of the properties of coil antennas to determine the direction from which radio signals are being received.

Standard ship and shore direction finders of the United States make use of a single coil composed of a few turns of wire wound on a large diameter. The plane of the winding is vertical. With this arrangement it is possible to get bearings with an average error of less than a degree. This excellent directional characteristic results from the fact that a coil antenna when rotated about its vertical axis picks up very loud signals at all points except where the plane of the coil coincides with a line drawn between the transmitting station and the coil. In this position (there are two points 180 deg apart when the coincidence occurs) the signal disappears completely. In Fig. 1 (a) is shown a typical plot of radio compass performance at a ground station. The narrow angles 180 deg apart are a measure of the accuracy ordinarily achieved. Each line operation requires quiet conditions

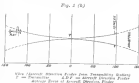
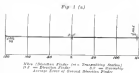


Chart showing typical performance of aircraft radio compass and ground station radio compass

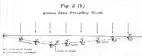
January 2, 1938

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energy is such that the exact point of zero signal intensity may be located.

In aircraft, however, receiving conditions are far from ideal. Major obstacles, ignition disturbance and vibration all conspire to produce a low noise level. Under this handicap, of course, impossible to find the point at which the signal is zero. Instead the pilot, operator selects the point of minimum where the signal disappears before the noise level continues to move the coil until the signal is again heard.



Effect of cross wind on radio compass in a cross wind and marked by which straight course can be maintained.

using this point also. The bearing, then, is the midpoint between the disappearance and reappearance of the signal. If the limits of the "zero" zone" were clearly defined, it might be possible to get fairly accurate bearings at distances in excess of one hundred miles. But, unfortunately, the signal and noise merge in very gradually that it is difficult to judge just when one begins to be the dominant sound. For this reason the radio compass is subject to large errors at the lower distances. At short distances where accuracy is required the radio compass is in use with other aircraft direction finding systems. In Fig. 1 (b) is shown the bearing accuracy which may be expected from a radio compass on an aircraft.

Rotating Coil Compass Not Suitable

The rotating coil radio compass such as is used for ship and shore station direction finding is not suited for aircraft. To obtain a signal strength which will allow bearings to be taken more than a few miles from a transmitting station, the coil dimensions must be so large as to be impracticable in mounting and turning within an aircraft fuselage. In place of the rotating coil a large fixed coil is installed in or around the wings. The turning of the coil is accomplished by swing the entire aircraft through the necessary angles.

It is the bearing of direction by turning the plane in a clockwise and counter-clockwise. To avoid it another type of coil is under development. This coil is made up of many small coils placed in a large fixed coil at right angles to each other. A small generator or electrical driving device turns the rotating element. Insulation difficulties and high cost combined with the inherent handicaps of any kind of aircraft radio compass prevent this scheme from being applied in Air Commerce.

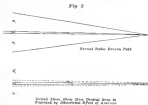
The increasing use of metal as a structural and covering material for commercial aircraft imposes a further handicap on the use of the radio compass. All metal planes such as

the Ford and Humber form an effective shield against radio waves. In aircraft of this type the radio compass will probably prove to be useless.

The range and hence the value of the radio compass may be increased by improving the sensitivity of the receiver. There are many factors involved in this expedient. Receiver control, ignition interference, noise level and manufacturing cost are major items which must be considered in any attempt to increase the sensitivity of an aircraft receiver. In exceptional cases it might be advisable to have a special receiver, but an established aircraft with other means for direction finding available it would not be preferable to resort to this means of improving radio compass performance.

Radio Compass Valuable on Isolated Routes

There may be situations in which no type of direction finding or other than the radio compass may be used. Isolated air routes where traffic is not dense enough to warrant a beam, or regular air routes in which the beam has not yet been installed are examples of cases in which the radio compass may prove of great worth. Where the radio compass is desired upon an air route for direction finding, pilots should be instructed to use in conjunction with the magnetic compass. If the plane is placed on the radio compass alone there may be serious drift when the plane is flying a course across the wind. In Fig. 2 (a) is shown the effect of drift when flying head on to a transmitting station objective. During a long flight and with a shift cross wind the deviation from the course may be so great as to be dangerous. The remedy is to use the magnetic compass bearing after each radio bearing. If there is a consistent drift of the magnetic compass in one direction a cross wind is indicated. Then the plane should be headed "up wind" a few degrees as in Fig. 2 (b). This will mean that the "true signal" bearing by which direction is found has been changed to a lead signal heading. Occasionally



The wind drift causes error. Note the narrow path of the true course. Due to the directional effect of the antenna does not impair the width of the central path is any appreciable extent.

by however, the plane should be swung through the necessary angle to provide a radio check of the estimated true course. If the plane has been headed into the wind at the correct point to maintain the true course, the magnetic compass reading taken on an subsequent radio bearing will be the same as on all previous radio bearings.

The most practical of the demonstrated methods by which a commercial aircraft may be led to its destination is through

the medium of radio beacon signals. In its present form the beacon is the result of extensive investigation and development by the Army and the Bureau of Standards. The application of the beacon to commercial airports is now being carried on by experiment at the Bureau of Standards.

The radio beacon is a transmitting device located on the ground which utilizes the directional properties of two and sometimes, in its simplest form, a signal of equal intensity is transmitted from each end and four "quadrantal angles" are formed by the combined emission of the two antennas. These areas are the markers of lines of flight. In practice

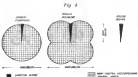
and a powerful beacon. The ability to indicate the direction of the true course and to give that information when on a degree or two off the correct line of flight is a matter of prime importance which can be accomplished in practice from the radio beacon alone. See Fig. 2.

The development of beam transmitters has not progressed to the point where aircraft may be successfully directed with such devices. It is not undesirable, however, that the beam transmitter will supplement the beacon at some future date. A beam transmitter radiates all of its emission to a very narrow zone. No signal is heard on either side of the beam, so there is possibility of a nearly degree or two bearing and no degree error. An example of Fig. 4 will illustrate that both the radio compass and radio beacon directional interfering signals over a wide area though the useful center of the directive signals is very small. The installation of two many beacons may cause an overlapping of the signals from adjacent stations with consequent interference and possible confusion to pilots. This condition will not take place for some years, however. Radio beacon transmitters usually operate at short waves. The English Marine Company has installed some beam stations on the English coast. They are being operated with considerable success as directors of shipping at harbor entrances.

No Known Remedy for "Night Effect"

Assuming that the ground or aircraft direction finding apparatus of whatever type has been properly installed and is in perfect working order there are possibilities for error which should be known.

First in order is the phenomenon known as "night effect" which manifests itself as broadcast receivers as "fading" but which causes erroneous bearings to be indicated by direction finding apparatus. There is no known remedy for this condition. It is fortunate that the phenomenon is only present at distances in excess of one hundred miles. When flying at a distance greater than one hundred miles from a



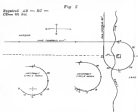
A comparison of the useful and interfering signals from the three general types of direction finders.

only use is made for it is seldom indeed that error are incurred on less than a degree apart from an important compass course. The elementary radio beacon while capable of giving good results with an expert operator in a plane was not suitable for commercial use. The difficulty was that a pilot who, through adverse flying or unaided drift, departed off the course had no means of knowing whether he should turn to the right or to the left in order to regain his course. This problem was solved by the transmission of an identifying signal from the radio antennas. This provided an identifying signal for each of the three conditions in which a pilot might find himself. For instance a pilot on his course hears the Morse signal "C" continuously repeated. If he happens to be to the right of his proper line of flight the Morse signal "A" is received, while if to the left a Morse "W" is heard. The vertical line which marks the line of flight is from two to eight degrees wide depending on the case used in the installation of the beacon. With the identifying signals it becomes very easy for a pilot to maintain his course regardless of error which.

Further Investigation Being Made

Further simplification of the use of the radio beacon is now being investigated. In its ultimate form a visual indicator will probably supplement the audible signals now employed. An arrangement whereby different colored lamps will flash the information that the aircraft is on, or to the right, or to the left of the course is now being developed.

The advantages of the radio beacon are almost self evident. First of all no special equipment is required on the airplane beyond that needed for receiving weather reports. With all the directional apparatus the audible signals now employed the range of the directional equipment almost surpassed that is desired without adding a pound to the weight carried by the plane. Excellent directional signals for distances of two or three hundred miles may be obtained at far time from the combination of the ordinary aircraft receiver



Illustrating a method by which an airplane may be landed in a fog.

because station the pilot may assume that his course changes rapidly both and forth. In the space of five minutes he may hear several cycles of the shift which at different periods indicate that he is on, off to the right or off to the left. As he enters the condition occurs only at night. No

great first should be placed in the directional apparatus when this shifting shows up. The pilot should fly by fast reducing until within a hundred miles of the destination. From there he may rely on the accuracy of the radio bearings.

A slight error is introduced into the radio bearing bearings because of the directional nature of the antennas. This is proven when the plane is flying at an angle to the true course, as in a cross wind. The error is a small one and becomes progressively less as the transmitting station objective is approached. The more of the error may be eliminated in some extent by receiver design and by the use of a shorter antenna which keeps at nearly vertical in position.

The break of the art which has to do with the landing of landing fields and the effecting of a landing in dense fog has not reached the stage of development where a single method or apparatus may be used to solve the problem in all respects. It is evident that the greatest amount of landing equipment may be used in a manner which will accomplish this purpose, though at many airports there is no known method or device which can land a plane in a fog with even a reasonable degree of safety.

Beacon Emergency Landings Possible

Where the landing field is large in extent and has no serious hazards nearby it is possible to make an emergency landing by using the beacon or the aircraft radio compass as the field indicator. Recently a pilot landed the landing field at Williams by means of the radio beacon and made a successful landing. His aircraft was good and he was lucky.

The station for airplanes and flying boats is somewhat different. They have, in many cases, a very considerable area in which to make a landing. By cooperating with a suitably located radio compass station on the ground a landing can usually be effected with little difficulty in very foggy weather. In Fig. 5 the airplane flies a little off the bearing plane from the compass station, and approaches the station from the side. When the bearings begin to change rapidly the compass transmitter is made to operate continuously, say as a Morse signal, down without the antenna (which is not needed when the bearing is taken). The compass station then sends a series of beacons on the plane and sends notification when the plane passes each quadrant. When the bearing 56 deg. is first received by the plane the pilot starts to make a 15 deg. turn. It has been ascertained previously what the radius of such a turn is, and the turn commenced in making a quadrant at each a mile or more. At the instant of commencing the turn the pilot notes the time or starts a stop watch movement which is started. If the bearings of 180 deg. and 270 deg. are received with the correct interval the pilot proceeds to straighten out immediately as receiving the signals for 9 deg. The landing is now with the plane in a power still being difficult as slowly as possible. Needless to say the altimeter should read about 500 ft. of the plane is to be kept within a reasonable distance of the compass station in landing. This scheme, proposed and tried by Lieutenant Dodd, U.S.N., of SAC 4, and Lieutenant Commander Dodd, U. S. Navy, is comparatively simple and reliable in application though the explanation may seem involved. It is but one of many methods by which existing directional beacons may be used in the solution of special landing and sailing problems.

Airplane direction finding by radio is not automatic. It is subject to the usual judgment on the part of the pilot. When used with intelligence, radio direction finding is a valuable aid which reduces the pilot of much of the strain of competing in adverse weather. To become proficient in the use of radio direction finding pilots should fly low radio bear-

ings in good weather, checking position occasionally by familiar landmarks. In a short time flight by radio bearings will become instinctive, after which it will require no more effort to fly safely by the radio "beacon" track in a fog than it does to follow the transportation artery on a clear night.

The concluding article of this radio series by Mr. Richard will appear in an early issue of Aviation.

Four Pitcairn Mailwing Planes Delivered to Texas Air Transport

PITCAIRN AIRCRAFT, Inc., the sales organization of Pitcairn Aviation, Inc., with headquarters at Philadelphia, has announced the sale of four Pitcairn Mailwing (PA-5) with Wright Whirlwind engines) to Texas Air Transport, Inc., of Fort Worth.

Three of the planes were taken from the Pitcairn Aircraft factory at Reynolds, Mo. and the fourth was taken from Des Moines, Iowa. The planes were taken from Texas Air Transport, and plane number and Andrews joined the planes in Texas. They will be used on the Galveston-Houston mail service, operated by Texas Air Transport, Inc.

J. H. Turner Named as President Of the New Swallow Airplane Co.

A REPORT received recently from Wichita, Kan., states that J. H. Turner, vice-president of Travel Air, Inc., has been named president of the New Swallow Airplane Co. The new company was organized from the purchase partnership of five Wichita business men of which Mr. Turner was chairman. The report also states that J. W. Craig was elected vice-president, C. A. Noll, second vice-president, W. H. Moore, treasurer, and W. B. Harrison, secretary.



Korov's only woman air pilot, Krystina Korov, is shown here with her first passenger, a child, on the ground at the airport in Pula, during the recent aerial voyage, in which she participated. She flew from her home in Korov for the purpose, with her mechanic as passenger.

Air Mail Pilots of America Now The National Pilots Association

THE ASSOCIATION, formerly known as the Air Mail Pilots of America, is a limited liability company, organized by the Post Office Department, was recently incorporated under the title of National Pilots Association with headquarters in Cleveland, O. The officers of the new organization are: H. M. Allison, 103 Avenue, N.Y., president; S. L. Rogers, Danbury, N.Y., vice-president and treasurer; and C. F. Jones, Cleveland, O., secretary and treasurer. At present there are 100 members.



Ernest H. Allison, president of the National Pilots Association.

Memberships in class "A" shall be restricted to pilots holding a "Master or Transport License" issued by the Department of Commerce, and (3) who are employed as pilots, or as pilots engaged on a regular schedule, (4) pilots employed by firms, or individuals in aerial transportation, photography, advertising or other aerial business, (5) pilots employed by federal, state or municipal governments except those engaged in military activities, such as the Army, Navy or Marine Corps.

Class "B" membership shall consist of (1) pilots holding licenses issued by the Department of Commerce and who are not eligible for class "A", (2) pilots formerly employed by the Post Office Department, Air Mail Service and who hold membership in "Air Mail Pilots of America".

Class "C" shall be honorary members.

All members who change their occupation will not be deprived of any of the privileges and benefits of the Association. Each application for membership in Classes "A" or "B" shall be approved by the Governor of the district in which the applicant resides, and by a majority of the Executive Committee, before favorable action will be taken. The resolution permits any member to nominate candidates for Honorary Memberships, but a separate vote of the Executive Committee is necessary for honorary action.

The purpose of the Association is stated as: "For the advancement of the Air Mail and commercial aviation and to provide closer relationships among pilots to enable them to perform more successful than can benefit them at a time and aviation is improved."

Each month a members' bulletin is published, giving general news from the various sections of the country. Accidents, activities, and comment on subjects relative to aviation, etc.

Fairchild Companies Are Merged Under One Holding Corporation

SHERMAN M. Fairchild recently announced the consolidation of all the Fairchild Companies under one holding company, the Fairchild Aviation Corp. of Delaware, with a paid-up capitalization of \$1,500,000. The subsidiary companies are: the Fairchild Aerial Camera Co., Fairchild Aerial Survey, Inc., Fairchild Flying Corp., Fairchild Aviation, Ltd., Canada, Fairchild Camera Engine Corp., Fairchild Aeroplane Manufacturing Corp., and the Company Mexicana de Avionacion de Mexico.

Mr. Fairchild is president of the new company with Baker, Jr. as chairman of the board of directors. The shareholders include Governor John H. Franklin of Connecticut, George H. Townsend, general manager of the Empire Motor Co., U. S. Grossman, vice president of the Fairchild Aviation Corp. and formerly vice president of the Otto Elevator Co., George R. Hale of Pittsburgh, William Dewey Lewis, an attorney, Maj. Talbot C. Freeman, formerly treasurer of the Glenn Air Transport, Ernest Robinson, John Paul and Harold Kunkel, who is secretary and treasurer of the Fairchild Aviation Corp.

Fairmont Realty Corp. Organized

The new group has organized the Fairmont Realty Corp. of New York, it was announced, with a paid-up capital of \$1,000,000. The newly organized company will own the land and buildings used under a long-term lease by the aviation corporation and subsidiaries. The realty company now owns about 50 acres at Farmingdale, L. I., adjoining the Long Island Railroad. Part of this land is to be used for new buildings and structures have already been let for the first task of a comprehensive building plan in the Avion Co. of Cleveland.

These buildings, covering 200,000 sq. ft. of floor space are to be erected and the first is to be ready for occupancy by the Fairchild Camera Engine Co. by Feb. 15, according to the plans. In discussing his plans Mr. Fairchild said that the engine company would continue to manufacture the four-cylinder air-cooled 125 hp. open type engine. Designers have been completed for an 80 hp. air-cooled open type engine which will be in production soon and experiments are being conducted with a view to developing the present engine by adding multiple banks to 800 to 100 cylinder engines for use in large transport planes.

The manufacture of the Fairchild color monoplane will be continued by the airplane company. Design is now being completed on a six place monoplane to be powered with an air-cooled engine and to be placed in production in the spring. It is understood that the company is planning to add two more types to its airplane line. One will be a four place color monoplane powered with the Fairchild Quinze 125 hp. engine and the other will be a light low powered sport plane.

Titled Italian Ace to Study Aeronautics in This Country

IT WAS recently reported that Deputy Cusumano, Italian ace in coming to this country to study the progress made in American aviation. Deputy Cusumano, whose full name is Count Eugenio Cusumano di Vittorini, has been entrusted with the mission by Signor Balbo, Italian under secretary for Aviation.

1927 Commercial Production

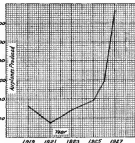
Total Estimated at 1653 With Advance Aircraft Co. Heading
List of 103 Manufacturers With 454 Planes

By RICHARD H. MOCK

THERE has been a great deal of speculation as to the number of airplanes produced during the year of 1927. Estimates have been published, varying from 1,500 to 2,000. Of course, it is impossible to have an analysis on 1927 production complete immediately after the close of the year in which the year estimate has endeavored to complete an analysis of the aircraft production for the past year, a question very submitted to the industry brought some very encouraging results. As usual a few of the manufacturers have been busy producing planes that they have not had time to submit their figures, but it is those few that the production can be estimated fairly closely. (The last few months of this small group of manufacturers have produced few enough planes to give sufficient ground for a very reasonable estimate.)

Figures have been received from all of the largest producers of commercial airplanes, and in most cases are published before a type manufacturer submit their figures can be published though their production is listed in the total estimate. From the data collected it is estimated that 1653 commercial airplanes were produced during 1927, and with the ordinary with the total non-commercial production, including land and seaplanes, is about 2200.

There were 344 airplanes accepted by the Navy Department during the calendar year of 1927. The only figure avail-



Curve showing yearly airplane production since 1919.

showed that of these, 636 were commercial planes. The figure of 1927 commercial planes for 1927, shows an increase of 168 per cent over the previous year. Since June 1, the production of airplanes has increased considerably, some manufacturers estimate that the increase has been as high as 2000 per cent. When considering this figure the true estimate of the increase of public interest and finance must be taken into account. As some manufacturers had produced comparatively very few planes during the spring, this figure is in some ways reasonable, though an average increase of approximately 200-300 per cent is somewhat more accurate.

The Department of Commerce has received 2762 applications for airplane licenses and licenses have been issued to 1653 with 1653 planes pending. The majority of these are in the nature of inspection, completion of data, etc. According to Edwin Jones, chief of Air Information Division the number will be considerably reduced early in the year. The remainder is made up of discrepancies and cancellations of applications for inspection from license identification. That of 1927 applications for identification, 887 have been assigned and 50 issued. In the Accident Report of the Department of Commerce, published in the Dec. 16, 1927, issue of Aviation, it was stated that there were no record with the Department



Quarter view of an Alexander Engineering Co. airplane. The Alexander Engineering Co. produced 200 airplanes during 1927.

on the planes delivered to the Army Air Corps, was 398 during the fiscal year ending June 30, 1927. The figure of 2203 airplanes is an increase of 98.4 per cent over the total number of airplanes produced in 1926. According to a special survey by the Department of Commerce, of airplanes, 1100 produced during 1926 and an analysis by the Airman, published in the issue of Jan. 31, 1927.

OX5 engines and a smaller number with other types of war surplus engines.

There has been a great demand for the 300 hp Whirlwind engine manufactured by the Wright Aeronautical Corp., Farmington, N. J. This company has had a very large output during the past year, the majority of which was for commercial use. Production facilities have been increased as fast as possible in order to meet the increased demand. The factory space has been increased and there have been many changes in the machine and assembly shops. In addition there is under construction, adjoining the present factory, a new building to be used for engine assembly and testing. It is to be ready for occupancy by April. Besides the production of Whirlwinds a number of Cyclone 520 hp engines were built and the company is now going into production on this type.

Most of the new surplus engine development is being devoted to comparatively low powered engines. There are now under construction a number of large passenger planes to be powered with engines developing approximately 425 hp. F. B. Goodrich, president of the Pratt & Whitney Aircraft Co., Hartford, Conn., has described the situation very well for the year.

"Considerable interest has been evidenced in the employment of the 400 to 500 hp, air cooled radial types of engines for commercial use. This type gives indication of probably increasing the number of the 400 to 500 hp, water cooled as given previously is one. New types of ships for 1927 seem to indicate that the air cooled radial is the one from 200 to 600 hp, will not only dominate the commercial field but will be almost exclusively the engine equipment.

"The most interesting mechanical application during 1927 of the 400 hp Whirlwind engine has been in connection with air mail operations. This engine is the standard equipment of the Boeing Air Transport Company which operates between Chicago and San Francisco. The weight saving of the air cooled engine over the previously used Liberty engine has provided for considerably more payload, and in addition, to this, performance in all other departments has been improved, particularly with reference to maintenance and repair.

1000 OX5's Put Into Service

"In view of the facts it may safely be said that the trend of commercial aviation is this country is increasing, and that from a poorer placed standpoint it is almost exclusively directed toward the air cooled radial engine."

The number of surplus engines produced in 1927 when compared with the number put into use is relatively low. The majority of the engines built during the year were for military use. It is calculated that there were 1800 war surplus Curtiss OX5 engines put into service during the year. This does not include a smaller number of other war surplus engines. In addition there were approximately 300 European engines acquired.

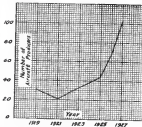
Toward the latter part of the year the lack of low powered engines began to be felt acutely. The situation is now a serious one and many manufacturers who have even facilities for the production of surplus engines, find themselves handicapped by the lack of a suitable low powered engine to take the place of the most exhausted stock of war surplus Curtiss OX5 engines. It might be well at this time to quote W. M. Shumaker, engineer at the Sinclair Airplane Mfg. Co., Wichita, Kans.

"The demand for the present Curtiss OX5 motorized airplane is far in excess of production. Within the same time the supply of OX5's engines will have been exhausted and after this time, it seems that low powered commercial airplanes will be no longer feasible.

"It is no opinion, since the future purchaser will be

dorced to buy airplanes equipped with higher priced engines, that it will be necessary to build better airplanes having a more finished appearance and fewer of them.

"Engines, at present, are much more valued than low priced commercial airplanes. Apparently, then, the performance, mechanical details and finish must be greatly improved to be



Curve showing increase in number of aircraft produced.

conform with the standards of engine manufacturers. Soon, surely, with the improved appearance and standardized design the trend toward too much simplicity must surely disappear."

The completed figures for the export of aircraft exports for 1927, have not been compiled yet but it is expected they will exceed all previous years. The exports in airplanes, as including engines, for the first half of 1927, exceeds the total exports for 1926. It is known that the surplus received by the United States fighter last summer increased the export of surplus engines and parts many times. The air plane exports for the first half of 1927 were \$113,119 as compared with a total of \$304,542 for the year of 1926. The engine exports for the first half of 1927 were \$125,692 as compared with a total of \$304,542 for the year of 1926. The increase of over 100 per cent over a similar period in 1926. The majority of the airplanes exported this year were for Canada and the South American countries, with some to Europe and Australia.

Aircraft Exports from the United States

Year	Aircraft Exports Value	Engines Exports Value	Aircraft Exports Value	Engines Exports Value
1927	\$113,119	\$125,692	\$113,119	\$125,692
1926	\$304,542	\$304,542	\$304,542	\$304,542
1925	\$250,000	\$250,000	\$250,000	\$250,000
1924	\$200,000	\$200,000	\$200,000	\$200,000
1923	\$150,000	\$150,000	\$150,000	\$150,000
1922	\$100,000	\$100,000	\$100,000	\$100,000
1921	\$50,000	\$50,000	\$50,000	\$50,000
1920	\$25,000	\$25,000	\$25,000	\$25,000
1919	\$10,000	\$10,000	\$10,000	\$10,000

It might be well to mention the surplus engines produced during 1927. Of 57 different commercial airplanes manufactured



Not since the immortal Wright Brothers startled mankind with their revolutionary flights, has the world known so brilliant a year for aviation as 1927.

It is a keen satisfaction to us that, almost from the beginning of successful mechanical flight, Valspar has been helping to make aircraft history.

We look forward to yet greater prosperity for the aircraft industry in 1928 with the conviction that Valspar will play its part as faithfully and as constructively as it has in the past.

VALENTINE & COMPANY



on some sort of a production basis during that year 37, or 36 per cent, were monoplanes. All were of the closed cabin type with only one exception though three had open cockpits for the pilots. It is interesting to note that of the manufacturers who produced 50 or more planes during the year, all of the planes were biplanes powered with Curtiss OX-5 war engine engines. The planes, almost without exception, were three place open cockpit cabin biplanes with a welded steel tubular fuselage and wood wings. There were 38 manufacturers producing this type, or 33 per cent, of the aircraft manufacturers. Of the 12 manufacturers producing closed monoplane aircraft completed their first models this year and in most cases during the latter part of the summer.

Practically all of the new commercial models are monoplanes and the general trend seems to be towards the extremely



Here three-quarter view of a Travel Air biplane. The Travel Air M-72 Co. produced 155 airplanes during 1934.

loaded closed cabin type. Of the airplanes now being produced 85 per cent have welded steel tubular fuselages and 87 per cent have wood wings, of which nearly all are fabric covered. To the writer's knowledge there are only three manufacturers using plywood for wing covering. There are three others employing corrugated sheet duralumin for the covering of both the fuselage and the wings, the covering taking part of the load. The above figures are taken from the table of manufacturers' specifications (elsewhere in this issue) though in a few cases airplanes were completed during 1934, and are not in production. In these instances the date of that plane was not listed in the table.

There are only two manufacturers in the United States producing flying boats for commercial use and in both cases they are equipped with a fixed undercarriage making them amphibious. Many manufacturers are supplying positions with their planes in place of a landing gear. In most cases the land gear can be quickly replaced converting the plane into a seaplane.

Data Checked and Rechecked

The data presented in the Specifications Table is believed to be accurate as possible and includes the manufacturers' own figures. It must be remembered that the performance figures can be greatly improved by a reduction in load. It is realized that there are great possibilities for errors in a tabulation of this sort, and for that reason the figures were checked and rechecked by both the manufacturers and by *AIRCRAFT*. As the table is to appear in the first issue of each month it will be possible to add other new and interesting data from time to time.

To summarize the production of airplanes in the United States during 1934, there were 2333 planes produced of which 1652 were for commercial service. Of these, 1698 were powered with Curtiss OX-5 engines. Some estimates put the number of commercial planes produced at a higher figure. The Department of Commerce analysis for the first 31 months of 1934 shows a total production of 1435, for all types of airplanes.

It is noted that this figure was determined from returns filed on third of the airplane manufacturers, which would indicate that these manufacturers had produced 1674 airplanes in 12 months, and that the entire industry produced 501 planes in 1933. It indicates the writer doubts to think the aircraft manufacturers for their cooperation in so willingly supplying the data given above.

Wies and Solomon to Fly South to Attempt World's Endurance Record

IT IS planned that on Jan. 3, George Wies and Levo Solomon will take off in their Stearman biplane for Dayton, Fla. where they will endeavor to break the world's endurance record. The plane has been equipped with two Curtiss Field, L. 3, N. Y. for the past few weeks and it was originally planned to try for the record from Rossmore Field, which adjoins Curtiss Field. Wies and Solomon will be accompanied on their trip south by Mr. Alby of the Yale Wars Old Co. and by Albert Rhoads. It is planned to make the trip in two days stopping over night at Langley Field, Va.

The plane is a standard Stearman monoplane powered with a Wright Whirlwind engine. The wood seats in the cabin have been replaced by a large tank and all the cabin equipment such as wheel brakes, etc. have been removed.

Worcester Aero Club Is Formed With Membership of Eighty-two

THE WORCESTER Aero Club, of Worcester, Mass., has been chartered as a branch of the American Society for the Promotion of Aviation, having an initial membership of 82 before the charter was closed.

The officers of the club are: William G. Sylvester, president; Arthur DeWalt, vice president; Eugene Bailey, secretary; Thomas D. Ford, financial secretary; James Dickinson, corresponding secretary; Alvin M. Bernick, treasurer; Walter Eakhead, sergeant-at-arms; and Paul Bergey, photographer.

The club plans to hold regular meetings during the winter months with leaders of the aviation interests of the country as speakers. Many of the members were there during the War and others are planning to enter the course of instruction at Whittier Field.

Pacific Air Transport Adds a Travel Air Plane to its Fleet

THE PACIFIC Air Transport operating the air mail, express, and passenger line from Los Angeles to Seattle has purchased a suitable plane to augment its present fleet of two. It is the Travel Air with Wright engine from S. J. Lippert in winning the recent Class A Air Derby from S. S. Fawcett to Spokane.

The plane is fast and will fit in well on the rapid five-minute service now being maintained over the long route of alternating mountain ridges and long valleys. In a recent test flight by Grover Tyler, general superintendent of Pacific Air Transport, the air speed indicator showed 180 m.p.h. at 1650 ft. m. The elapsed time made by Mr. Lippert in the San Francisco to Spokane Air Derby was 2 hr. 35 min.



LARGEST GEAR OF LOERING AMPHIBIAN—ARMY TYPE OA-1C

AMONGST the many improvements on the Army's newest type of Amphibian, recently delivered—the OA-1C—are large oversize tires which permit maneuvering on extremely soft and muddy fields.

Another step in the continued perfection of "The Plane that Does the Hard Work for America."



LOERING AERONAUTICAL ENGINEERING CORPORATION
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American Aircraft Products and Foreign Markets

Large Increase in Exports Shows That Profitable Outlets Exist

By GRISSOM E. HAYNES

Department of Commerce

THE LARGE increase in our aircraft exports in the latter months of 1927 (particularly October—the largest since the World War period) shows that a vast and profitable market for our aircraft products exists outside the United States. The seasonal lull of the past year here advanced our aircraft products to the ends of the earth and have resulted in many inquiries being received by our makers from prospective purchasers abroad. Some of these have been translated into tangible orders and shipments as is evidenced by the increased exports referred to above. Specifically our exports for the first 20 months of 1927 had a wholesale value of \$1,969,692 or almost 64 per cent more than for the whole calendar year of 1926. Of this total, \$772,534 was registered in October (the latest month for which figures are available) which is the highest monthly total recorded since the World War.

A Period of Negotiations

It was not to be expected that the tremendous advertising of American aircraft products experienced last summer would be immediately reflected in export statistics. Naturally there would be a period of negotiations before orders were placed. There would also be a lapse of time between the placing of orders and actual shipment and the fact that the larger number of our makers are linked to domestic orders last year prevented many export orders from being promptly filled. Consequently the increase registered up to the beginning of the winter months is much more encouraging than the actual dollars and cents figures would indicate. If October figures referred to above are any indication of future foreign demand the winter of 1927-28 will be a period of activity in foreign orders by our manufacturers.

Our export trade in aircraft products (new for the operations of a few firms) has always been of an international nature. Consequently European makers, aided by their respective governments, have systematically expanded foreign markets and have outside our nation even in our most loyal sections of the Western Hemisphere. No better example of this can be cited than the activities of Louis Breguet, the French manufacturer whose plants are distributed all over the world, making a production approximately in line of pace. French exports of aircraft products during 1922-1926 had a value of more than \$16,696,000 at current rates of exchange. English exports of aircraft products have been valued at between five and six millions of dollars a year for the past several years. There is a market that a market, the aircraft manufacturers abroad and that competing makers are taking advantage of it. With the present high postage of our planes, engines and other equipment abroad, as better loss could be imagined for our makers to search a determined

campaign to get foreign orders. There is a more or less only passing period in developing this trade, but the experience of our competitors have shown this development worth to be justified.

In considering future development of our potential export trade the statement can safely be made that it will be composed largely of commercial equipment. In view of the large proportion of military equipment making up our present exports, the statement sounds fearful. However, the trend is toward self-dependence for military aviation in practically all countries today. Consequently our exports of military designs will probably become more and more limited to the sale of limited quantities of units as prototypes and the inevitable export dues of the sales of manufacturing rights of designs on various bases for production in other countries. Commercial planes, however, will not be so hampered by the spirit of nationalism or military expansion. In fact, due to the independent character of the industry in this country, the growth of our makers will have a distinct advantage in being designed solely for commercial efficiency. Foreign makers required to construct plants within the close of military aviation authorities in order to take advantage of subsidies will be found at an operating disadvantage in competition with American equipment constructed along purely commercial lines.

These conditions prevailing, it follows that independent exporters the world over will turn to American equipment solely on merit if negotiation enters into their operations. Efficient transportation can be sold anywhere as is proved by the sale of the American automobile, and American commercial airplanes may be expected to follow in its footsteps.

Should Maintain Lead in Field

In considering our immediate problems in the export field, new advantages and disadvantages present themselves. Now where else in the world have purely commercial designs of aircraft, designed for efficiency in both manufacturing and operation been carried to such success as in this country. Nowhere has the development of power plants suitable for commercial purposes been so successful. No other country possesses such a large domestic market, highly competitive and independent, for commercial planes and engines. With all these factors making for efficient production and marketing, it will be strange indeed if we cannot maintain our lead in the field against foreign makers.

There is no denying that our makers also work against many handicaps at the present time. Governmental aids, such as the active aid of military missions, help foreign makers to occupy competitive markets and in many cases various aids are given them in their manufacturing operations rather of



OUTSTANDING among the notable Achievements in Aeronautics during 1927 was the capture of Four World Records by the new Vought "Corsair" Airplane.

OUTSTANDING because these World Records — One for Altitude and Three for Speed — were made with a strictly stock naval service "Corsair" Seaplane.

OUTSTANDING because these records were made without special preparations, the airplane, engine and propeller being the original service equipment delivered in October 1926 and used, without changes or modifications, in all flights since delivery of the plane, even to date.

OUTSTANDING because each and every Vought "Corsair" is guaranteed to equal or better these World Record performances; and is sold with such a guarantee —

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CHANCE VOUGHT
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LONG ISLAND CITY, NEW YORK

which can be used to be available to our manufacturers. The depreciation of certain European currency has helped some of our competitors to make sales abroad. Learning requirements for commercial planes in many countries militate against the sale of American planes in those markets. As an instance, the "Sport of St. Louis," which was so enthusiastically greeted by French aeronautical authorities, could not be licensed in France for commercial purposes under existing regulations prohibiting tubular steel welded fuselages.

Despite the handicaps stated above, our exports of aircraft products have shown steady increases since the immediate post-war period, almost paralleling increases in production during the same period. The value of our aircraft products exports was \$430,268 in 1935; \$798,273 in 1936; \$758,606 in 1937 and \$1,307,219 in 1937. These figures are incomplete in that they do not include plane sales to other countries, such as Canada, Mexico, etc., for delivery. Figures for only the first ten months of 1937 are available but the total exports for that period of \$1,440,590 are almost 44 per cent in excess of the total for the whole year preceding. If the month of October, 1937, with exports of \$374,626 can be judged on indicating a definite trend, it is possible that 1937 exports will double those of 1935.

Canada Was Largest 1937 Market

Canada was our largest market for aircraft products in 1937. Followed by Peru, Chile, Russia, Belgium, Japan, Germany and Colombia in order named. This shows that our market is not restricted to countries of the western hemisphere. South America leads the other continental areas, followed by Europe, Pacific and Central America, and the Far East, in the order stated.

There is an increase with 1936 exports, over half of which went to Europe, the balance being divided between North and South America, with only a small total to the Far East. In the following tabulation is shown the distribution of our aircraft products by countries and continental areas as a percentage basis during the first ten months of 1937.

NORTH AND CENTRAL AMERICA		EUROPE	
Canada	\$917,402	U.S.S.R. Russia	\$176,229
Mexico	34,265	Belgium	84,182
Chile	34,580	Germany	75,031
Cuba	39,649	United Kingdom	35,695
Dominican Republic	5,979	Netherlands	18,806
Paraguay	4,924	Switzerland	16,095
Colombia	371	France	5,475
Guatemala	391	Czechoslovakia	4,846
British W. Indies	326,029	Poland	4,380
		Spain	4,100
		Italy	3,599
		Norway	2,689
		Denmark	129
		Total	\$613,679

SOUTH AMERICA		FAR EAST & MISCELLANEOUS	
Peru	\$334,892	Japan	\$77,621
Chile	225,444	Australia	4,720
Colombia	47,544	British India	3,876
Argentina	18,290	Dutch E. Indies	1,218
Brazil	17,499	Philippine Islands	427
Yemenite	502	British Malaya	400
Total	\$662,947	British India	220
		China	182
		Total	\$95,770

Pacific Technical University Organized at San Diego, Calif.

ORGANIZATION of the Pacific Technical University was recently announced at San Diego, Calif. Within two months the University will open a comprehensive course in aeronautics, teaching by night the theory of flight and focusing the student's education by actual factory training and flying experience under the personal supervision of instructors.

"Now that the future of commercial aviation is assured and the industry destined to grow with great rapidity," said P. H. Heron, president and chairman of the board of directors, "a more suitable course must be provided to furnish the trained men who will be required to keep the world's wings in motion. There is a great field for service of a properly motivated individual such as the Pacific Technical University."



P. H. Heron, president of Pacific Technical University

While realizing that such a school will have to be the future development of tomorrow.

In explaining the plan and policies of the University to a representative of *American* magazine, Mr. Heron stated that it is the board's purpose to conduct an institution on the highest possible standards, to admit exclusively only from "ambitious" young men who intend to make the business of flying a lifetime profession, and not to cater to the casual student who seeks only a superficial knowledge of aeronautics.

Actual management of the affairs of the institution will be in the hands of its officers, board of directors and advisory board. P. H. Heron, president, is a graduate of Iowa Technical School, Chicago Teachers' College, the United States Army School of Military Aeronautics, and the San Diego State Teachers' College. He also has had special instruction at the University of Illinois, University of Wisconsin, University of California and Arizona Institute of Technology. Ray Reynolds, vice-president and treasurer, is a former faculty member of the University of Arizona on an instructor of aeronautical engineering, is an associate member of the Society of Aeronautical Engineers of New York and the Southern California section. Other members are: A. R. Wines, Secretary, Robert Bentley, Edward C. Taylor, to be in charge of Aeronautical Engineering, Mathematics and Machine Drawing, E. E. Klotzberg, to have charge of airplane mechanics.

The board of directors is composed of H. J. Edwards, Heron, Ray Reynolds and A. R. Wines. The advisory board consists of Henry C. Johnson, formerly superintendent of San Diego City Schools, Louis Col. Charles M. Frost, coast artillery officer, D. E. McPherson, executive manager of the San Diego Chamber of Commerce, and others.

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Temple N. Joyce Appointed Sales Manager of Chance Vought Corp.

ANNOUNCEMENT HAS just been made by Chance Vought Corp. of the appointment of Temple N. Joyce, of Annapolis, Md., as sales manager in charge of service and sales.

Mr. Joyce, who is a war pilot of international repute, is well fitted to assist in perpetuating the well-known Vought policy of designing and producing outstanding types of military aircraft suited for superior performance and rugged construction. He will take over sales activities formerly handled by Clarence Vought.

Additions being made to the Vought factory and offices will enable the company's facilities to take care of the rapidly increasing demand for its aircraft. While Mr. Joyce's headquarters will be at the Long Island City plant of the company, he will also maintain an office in Washington, D. C., and also spend considerable time at the company's Pacific Coast office in San Francisco.

Temple N. Joyce, newly appointed sales manager of Chance Vought Corp.



In 1917 Mr. Joyce was commissioned in the Air Service, having received his aviation pilot certificate with the Tuscon Flight Club, and obtained his private flying license. He became a test pilot and later command chief test pilot, and in 1919 was made a captain. In 1923 he was commissioned major in the Army Air Service Reserve, which commission he held until 1925. From 1925 to 1928 Mr. Joyce was the American representative of Morane-Saulnier, the well-known French aircraft manufacturing firm.

From November 1926 to November 1927, he was the Washington representative of the Curtiss Aeroplane & Motor Company, Inc., meanwhile acting as their experimental test pilot in addition to handling sales and engineering work in Washington. Mr. Joyce's ability as a pilot has called forth much favorable comment on many occasions and then, with his knowledge of the aeronautical technical problems of the Army and Navy Air Services, has undoubtedly been an important factor contributing a great deal to his success as airplane sales and distributor.

His interest in, and efforts toward, the development of civil aviation is reflected by his appointment on the Maryland State Aviation Commission and the Baltimore Airport Commission, and his active membership in the Flying Club of Baltimore. He takes a very active part in these organizations and has been an important factor in obtaining the new \$1,500,000 airport now being developed for the city of Baltimore.

The Vought Company is completing one of the new "Corsairs" high-speed two-seaters for Mr. Joyce to use in demonstrating and in commuting by air to Washington, and En route to the West Coast.

Strauss and Buegeleisen Low Bidder On Goggle Contract for the Navy

STRAUSS & BUEGELEISEN Co., of Brooklyn, was low bidder when the Navy opened recent bids for pilot type and passenger type goggles. The pilot type is a Navy development that has been recently approved. It has a special curved lens that gives an unusually wide range of vision and the lenses rest in a sponge rubber mask. The passenger type is the regular Strauss & Buegeleisen "Roundell" one-chamber side lens goggles, but equipped with a sponge rubber face pad. The lens are worked to a plane and are in the conventional type frames.

The passenger type goggles is being marketed commercially and is known as the New Navy Model Roundell. The sponge rubber face mask gives a tight fit without pressure being concentrated at any one spot. It is said to be especially comfortable about the nose. This new goggles does not interfere with a helmet or cap, is well ventilated and provides a measure of air vision. As mentioned above the goggles is equipped with Roundell lenses and they can be supplied in any color or tints. Plans are also being made to market commercially the navy pilot type goggles.

National Flying Club of America Appointed Air-King Distributor

THE NATIONAL Airways System of Los Angeles, Ill., has appointed the National Flying Club of America, Inc., its distributor for a territory comprising DeKalb, N. J., N. Y., and the six New England States. Headquarters of the new distributor will be at No. 2 Columbia Circle, New York. The company will appoint dealers to represent it throughout the territory. Charles F. Wells is president of the National Flying Club and Sidney Glusberg secretary. Mr. Wells is also president of the Florida Airways, and was formerly associated with the New York distributor of the American Eagle Falls Airways aircraft air line, etc.

The National Airways System manufactures the well known Air-King surplus. During the year 1927 the company produced 50 planes. Increased production is planned for 1928.

Consolidated Gets Navy Contract For Training Planes and Parts

THE NAVY Department has awarded a contract to the Consolidated Aircraft Corp. of Buffalo, N. Y., for eight airplanes and parts at a cost of \$61,250. They are training planes equipped with Wright Whirlwind engines of the type now used at the Navy's air stations.

Another contract was awarded to Tupper & Wood, Inc., Philadelphia, N. J., for construction of a mobile mooring mast for the dirigible Los Angeles, at Lakehurst, N. J., for \$27,550.

Fifth Aviation Company Files Application for Incorporation

VEALE AVIATION, Inc., of Hamilton, Pa., has applied to the Public Service Commission for incorporation as a flying service for passengers and freight. F. G. Depueaux, William H. Veale and Oliver E. Phillips, of Hamilton, are the incorporators. The capital stock is \$50,000. The application in the 80th within the past month the incorporation is a small transportation company within the state of Pennsylvania.

In 1928 —

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on the TRAVEL AIR PLANE



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When Travel Air installs Air Speed Indicators, Compasses, Bank and Turn Indicators, Fuel Level Gauges and Navigation Lights, they will be Pioneer exclusively. In fact, Pioneer Instruments are almost invariably the choice of those manufacturers who produce planes of superior quality, dependability and performance.

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- ☐ Hand Fuel Pump
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- ☐ Lamps, Instrument
- ☐ Landing Lights
- ☐ Navigation Lights
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- ☐ Oil Pressure Gauge
- ☐ Power Fuel Pump
- ☐ Refueling Pump
- ☐ Seatbelt
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Looking Back at 1927

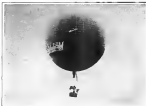
Cont. from page 25

by the original Wright Whirlwind engine that was in the plane on the New York-Panama flight.

Shortly before Aug. 16, there began what might be considered a black period in aviation during 1927. James D. Dole of Hawaii had offered \$25,000 in prize money to the first two planes to make a non-stop flight from California to the Pacific Islands. Several entries entered the race which was referred to as the Dole Derby, and due to various reasons, the principal one being insufficient time in which to prepare for the race, two fatal accidents took place before the race was even started. The original date set for the start of the race from the Oakland Airport was Thursday, Aug. 11, but as the result of an agreement between the race entrants the race was put off until noon of the following Tuesday, Aug. 16. The race was won by Arthur G. Gurney and Louis W. H. Davis, U.S.N., pilot and navigator, in the Terra. An oceanplane "Woodward" (Wright Whirlwind), which covered the distance from Oakland Airport to Wheeler Field in 25 hr., 17 min., 55 sec. Second pilot winner, and undoubtedly the only other plane to complete the flight, was the former oceanplane "Albatross" (Wright Whirlwind), piloted by Martin Jansen with Paul Roderick as navigator, which completed the flight in 28 hr., 18 min. Of the eight planes which started the race, two crashed on the runway of Oakland Airport and three turned back, and one of these returned two hours later. The plane piloted by J. W. Frost with Gordon Scott as navigator, was never heard from again after it had passed out over the open water of the Pacific, nor was the plane piloted by John A. Pollard and accompanied by Frank V. R. Knappe as the navigator and Miss Mildred Dornan, the only woman in the race. After turning back from an initial attempt to make the trip Capt. Wm. P. Service took off again on the following morning in his plane with the intention of making the whereabouts of Frost and Pollard. Sometime later he was informed that he was in a spin and going down. That was his last message to the outside world. As the result of these disastrous many and varied problems were filed in Washington against the continuance of trans-oceanic air races, and for a time the former racers were relegated to the coast districts.

Another dark day in aviation in 1927, was Aug. 25. On this day Paul Roderick took off from Glynn Isle Beach, Brazil,

Brasilia, to attempt a 4,000 mi. non-stop flight to Rio de Janeiro, Brazil. At the time of the take off the plane carried a load of 525 gal. of gasoline which would enable Roderick to stay aloft, barring accidents, for about 32 hr. The flying schedule mapped out called for his arrival in Rio de Janeiro around 3:30 P.M., Aug. 27. Since the first night when he was sighted flying over open water by a north bound steamer, no word has been received of the pilot's fate. All efforts



The "Detroit" (Hill and Schinner) winner of the 1927 Gordon Bennett International Balloon Race.

to locate his plane and also the planes of the missing Dole Derby team have proved futile.

A fourth successful aerial conquest of the north Atlantic was accomplished on Sunday, Aug. 26, when after a 33 hr., 26 min. non-stop flight from Harbor Grace, N. F., Edward F. Sledge and Wm. S. Brock landed a Stinson-Detroiter oceanplane (the National Air Tour winning plane and later christened the "Pride of Detroit") at Guelph, Nova Scotia, England. This flight marked the accomplishment of the first leg of a contemplated aerial trip around the world. The flight progressed successfully as far as Tokyo, Japan, a distance of over 15,000 air miles. Upon arriving at Tokyo, Brock and Sledge received so many requests to abandon the



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So, from the word "Contact" back to the hangar you must have tires that will help you up and then help you down again. Goodyear Airplane Tires do both. They roll easily and smoothly over soft or

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Goodyear Airplane Tires are made to fit the weight and character of the ship; to stand the gaff of "Emergency Fields" and be ready for work in the morning.

The very best materials, and an experience older than aviation, go into every Goodyear Airplane Tire. And into every other airplane part that Goodyear makes.

Aeronautics Department

THE GOODYEAR TIRE AND RUBBER COMPANY, INC., AKRON, OHIO

GOODYEAR
AIRPLANE TIRES



The start of the Free-For-All Military Powered Ship Race, held during the 1927 National Air Races, at Sloatsburg, Wash.

attempt to fly across the Pacific that they gave in to wishes of relatives and the general public and returned to the West Coast of America by boat. They had originally set out to establish a new coast-to-coast record, and with an arrival at Japan they were a little over one week ahead of the existing record—the world record of 29 days.

The first trans-Atlantic failure happened on Sept. 6, when "Old Glory" piloted by James H. Watt III with Lloyd Wilson Bennett as co-pilot and Philip A. Fayon as passenger fell into the waters of the north Atlantic while attempting a one-day flight from Old Orchard, Me., to Rome, Italy. When last heard from the plane was five hours off the coast of Newfoundland, and in the early morning of Sept. 7, the latter California reported the plane overhead and flying well. Four hours later the shipwrecked Curtiss and Leptand pilot up an S.O.S., from the plane, but no position was given. From that time on no further word was received and some weeks later a steamer picked up a section of the plane that was floating around in mid-ocean. The plane was powered with a single Bristol Jupiter 480 hp. engine and was taking off with a full load on the beach at Old Orchard a man of approximately a mile and a half from the shore. It had been originally intended to take the place of the Curtiss-Brown Field, L. I., but due to the absence of a favorable wind it was decided to use the beach at Old Orchard.

On the same day, and as a matter of fact, only a few hours after the S.O.S. call had been received from Old Glory, Capt. Tracy Kelly and Leroy James Moffett took off from Haver, Mass., in their seaplane, "The John Carter," and made one-stop to London, England. To all appearances the plane was functioning properly as it faded into the distance sky. However, the same of the other 36 failed trans-oceanic planes no trace was found of either plane or its occupants once it had disappeared from view.

American Wins Gordon Bennett Balloon Race

Sept. 32 marked the winning for the second time in succession of the Gordon Bennett International Balloon Race. The 1937 race which was held at the Ford Airport was won by E. J. Hill and A. G. Schlemmer who piloted their entry the "Delirium" to Basle, Sw., having a total distance of 725 mi. from the starting point. Second place was also won by Americans; Ward T. Van Orman and W. W. Morton covered 675 mi. in the "Goodbye V2". Third place was led for by German balloonists Hugo Kunkin and A. W. Schlemmer, and the pilots of the French entry "LaFayette", which took averaging 608 mi. In winning the race American returns the Gordon Bennett trophy for another year and should this country succeed in winning the 1938 race it will become the permanent owner of the trophy. The trophy by 344 and Schlemmer marks the sixth victory for America and places this country in the position of having won the second largest number of races. Belgium is first with five victories in its credit.

The morning of Sept. 29, saw the beginning of what is regarded as America's annual aeronautic classic, the National Air Races. On this date the planes in the Class A Derby from New York to Spokane, Wash., (where the Air Races were held) took off from Roosevelt Field and started their dash across the country. This race was won by C. W. "Speed" Bolman, who piloted a Laird biplane (Wright Whitcomb) from point to point in a total flying time of 18 hr., 42 min., 47 sec. E. E. Sullivan in another Laird plane finished second, and W. H. Williams in a Curtiss "Albatross". On the following day the planes in the Class B race took off from Roosevelt Field. This race was won by Charles W. Meyers who made the trip in a Waco 10 in the official flying time of 30 hr., 23 min., 15 sec. Second place

was won by Leslie Miller in an Eaglehawk plane, and another Eaglehawk plane piloted by J. S. Charles won third place. A one-stop race from New York to Spokane in which two Stinson biplane competitors were piloted by Eddie Bowman and the other by "Duke" Schiller and an "Air-King" biplane piloted by Jack Lacey were entered, and proved successful as both Stinson and Schiller were forced down a short distance east of Spokane and the "Air-King" failed to get started.

A Class A and Class B Derby from San Francisco to Spokane on Sept. 30 were won by M. G. Leppan and Gail L. Langdon respectively. Leppan flew a Travel Air plane and his total time for the trip was 9 hr., 16 min., 37 sec. Lang-



Wm. D. Brock (left) and Edward F. Schlemmer in front of their Stinson seaplane "Fidel of Dayton"

don flew an International biplane and his flying time was 9 hr., 58 min., 15 sec.

The National Air Races themselves were held from Sept. 21-25 and during this time the visiting pilots completed in 23 different events. Spies do not permit a resume of these events but the very interesting events were the Liberty Engine Builders' Trophy Race for Observation Plane which was won by Lieut. H. A. Johnson in a Curtiss XO-13-A plane with a speed of 173.150 m.p.h., and the Free For All Military Pursuit ship race which was won by Lieut. E. C. Sutton in a Curtiss XP-4-B plane at a speed of 361.596 m.p.h. While reviewing the 1937 National Air Races, the fact is worthy of mention that for the first time in history the races paid their way, according to figures filed with the National Air Derby Association of Spokane by public accountants who audited the books. Total receipts including funds raised from ticket sales, concessions and miscellaneous sources, amounted to \$214,262.96, while expenses totaled \$123,146.00, in all \$97,351.00 was paid out in prize money and \$92,911.96 for trophies and their expenses directly incidental to contests.

Oct. 19 was the beginning of a third unsuccessful attempt

Pilot-Instructor Turns to the Institute for Further Study

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to fly end-to-end across the Atlantic, but definitely this time the occupants of the monoplane "Assaultoer Gert", George Haskins and Miss Ruth Elder, were rescued when their plane was torn down on open water some 325 mi. north of the southwest of the Azores. The plane had taken off from Roosevelt Field in the late afternoon of Oct. 16, with a gross load of 530 gal. After covering approximately 1,000 mi. engine trouble developed and it was necessary for pilot Haskins to land on the surface of the water close by the Dutch tender *Neanderdoel* which was five days out from Rotterdam bound early for Dayton, Texas. Shortly had Miss Elder and Haskins been taken aboard when the plane burst into flames and sank. Afterward the cause the tanker headed for the Azores where it safely landed the rescued aviators.

The Mitchell Trophy Speed plane race which has recently been held at the time of the National Air Races was flown in 1927 at Dayton, O., on Oct. 22, in connection with the dedication of Wright Field. Fifteen planes started and finished.



Leet. "VP" Williams, U.S.N., lands his Krichbaum-Packard racer fitted with ground landing gear.

ished, but 10 of them were disqualified, and the race which consisted of nine circuits of a 13.96 mi. course was won by Leet, flying a 10-average speed of 148 m.p.h. The fastest lap was made by Lieutenant Krichbaum with a speed of 158 m.p.h.

Although no official information has been issued relative to the speed tests conducted by Leet, Al Williams in his Krichbaum racing plane equipped with a 1200 hp. Packard V engine, it is worthy of mention that Lieutenant Williams originally intended to enter his plane in the 1927 Schneider Trophy contest which was held at Venice, Italy, and which was won by Flight Lieut. Whistler in a Supermarine Hispano monoplane with an average speed of 201.488 m.p.h., and established a new world's airplane speed mark. When it was found that it was impossible to prepare his plane in time for this race Lieutenant Williams substituted positions with a ground landing gear, and when sometime later test flights were made it was officially estimated that he flew at a speed well over 300 m.p.h. Should Lieutenant Williams be able to duplicate this speed it official tests will break the world's record of 209.5 m.p.h., established by Major de Boreham over a three kilometer course at Venice, Italy, several weeks after the Schneider Trophy contest.

Nov. 4, was a day of tragic scenes. On that date Captain Hawthorne C. Gray of the Army Air Corps went aloft in a four-engine biplane at Scott Field, Belleville, Ill., and reached a height of 55,470 ft., a height heretofore maintained by man. However, the aircraft lost the captain's life. When he was found dead in the cockpit the following day in the trees near Sports, Texas, his oxygen tank had been covered by a bolt. At the official investigations it was decided that Captain Gray had accidentally cut the tube while trying to cut away his parachute in order to reach a higher altitude.

On Nov. 15, the Bureau of Standards reported to the War

Department that calibration of the barograph revealed that a height of 42,430 ft. had been reached. This height is exactly the same as was reached by the late explorer on May 4. But due to the fact that he was forced to jump at 8,000 ft., when his balloon was descending too rapidly, the Federation Aéronautique Internationale at Paris refused to recognize the record. It is expected that the War, if record will be approved by that international body.

Colonel Lindbergh Flies to Mexico

The last airplane accomplishment of the year was undertaken and successfully completed by the year's outstanding aviator, Col. Charles A. Lindbergh. On loan of Doc. El. Colonel Lindbergh took the Spirit of St. Louis off Bolling Field, Washington, D. C., and started a 3,000 mi. non-stop flight to Mexico City, Mexico. The time of this flight was 27 hr., 19 min., or approximately six hours less than his famous flight from New York to Paris. At the time of the take off the plane had a full load weighing 6,750 lb., including 365 gal. of gasoline and 19 gal. of oil. Due to his plane flight he made another spectacular take off, the weather conditions were very good and after a run extended to his almost 2,000 ft., Colonel Lindbergh got the Spirit of St. Louis off the ground, just barely clearing the trees at the far side of the field. According to Colonel Lindbergh himself, this trip was in some ways the most interesting flight he has ever made. He flew half of the time and in view of the course he was taking he was forced to fly in darkness for about 375 mi.

After a short stay in the Mexican capital he will make a tour of Central American and South American countries and return to St. Louis by way of Cuba. With his trans-continental flights, the trans-Atlantic flight, the tour of the country and the Mexican flight it is estimated that Colonel Lindbergh has piloted the Spirit of St. Louis for a distance well over 40,000 mi. The Wright Whirlwind engine has been overhauled only once since it was installed in the plane and this was after it had run about 1,000 hours.

What feats will be accomplished by the airplane during 1928 is a matter for speculation, but at this writing first preparations are being made by three sets of American aviators to bring back to America the world's endurance flight record which was captured in London and Copenhagen by the German pilot Graf Zeppelin on Aug. 8, when they completed a flight in a Zeppelin 5-10-L plane for 62 hr., 55 min., 11 sec. If any of these attempts proves successful the record of airplane accomplishments during 1927, will have been to establish the same manner as they did in 1927.

1928 Schneider Contest to be Held in Month of September

IT WAS recently announced by the Royal Aero Club that next year's Schneider Trophy airplane race will be held in September at Blackpool, Merseyside, the Solent, or Liverpool. It is reported that the British Air Ministry has decided to allow anyone to participate in the race next year. Unless the Air Ministry can be induced to reconsider its decision it is held that there is a great danger that Britain will not be represented.

The notion that unless the United States, which did not compete this year, decides to re-enter the contest will be a bit vain.

It is understood that the British Aero Club has taken a hand in the matter and is bringing every possible influence to bear upon the Air Ministry.



The College of the Air



Major William, General MacArthur, and other officers of the Marshall Flying School, are shown in the photograph above. The school is a military aviation school, having been established in 1917, and having since then, equipped with modern American equipment, in which, notwithstanding, it has been successful.



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Already through its extraordinary facilities, its thoroughness of training and its array of experts, the Marshall School has become famous as the College of the Air. Never before has any school gone to pains and expense such as at this great aeronautical university.

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Plan Air Service at Cherbourg To Connect With Ocean Liners

POSSIBILITIES of an air service at Cherbourg, France, are reported by the Department of Commerce in a statement received from Consul Samuel H. Wiley. It is stated that this proposition is receiving the attention of commercial aviation companies in Europe as a connection with ocean lines.

The initial air service contemplated is a passenger and mail connection from Paris and London with the fast French-Air liner liners arriving and departing from Cherbourg. Passengers by whom the element of time is of importance, could by means of a service of hydroplanes and seaplanes operating in conjunction with the arrival of fast liners, arrive in Paris five hours earlier and London about six hours earlier than at present.

It is believed that sufficient number of passengers and a sufficient quantity of mail would enable an air service between London and Paris and Cherbourg to make the service feasible on a financial standpoint. The air France, a French company, and the Imperial Airways, a British company, have studied the feasibility of a service from this port and both companies have expressed their intention of inaugurating such a service when the existing obstacles are removed.

W. A. Mankey Now Chief Engineer Of B. F. Mahoney Aircraft Corp.

W. A. Mankey, former chief designman of the Douglas Company, Santa Monica, Calif., and for the past six weeks with the engineering staff of the B. F. Mahoney Aircraft Corp., has been appointed chief engineer of that company according to officials of the Mahoney Company.

Mr. Mankey, after graduating from the engineering department of Dakota Wesleyan University was employed by the Bureau of Aeronautics, Navy Department to assist in the development of the NO type seaplane. After six years with the Bureau he went to California to work with the Douglas Company.

Since his connection with the B. F. Mahoney Aircraft Corp., a number of improvements have been made on its current production "Trougher" which will be the production type for a number of months.

San Diego Votes a Bond Issue To Establish Triple A Airport

LEONARD H. FIELDER, a downtown airport, was voted by residents of San Diego, Calif., in a recent bond election. It will be a class Triple A airport, available for both land and seaplanes. Work will begin within a month, a number of concrete runways constructed, and it is expected the airport will be completed by next July.

The bond issue carried four to one, the only bond issue of record on the ballot that received the required two-thirds majority. A statement by W. W. Olson, president of the San Diego Chapter of the N.A.A. declared that the citizens of San Diego recognize the importance of commercial aviation and its best possibilities for the future.

As part of the celebration on the day of election at the B. F. Mahoney airport approximately 30 military, naval and civilian seaplanes were placed on exhibition and a crowd of several thousand people witnessed them.

F.A.I. Awards World's Airplane Altitude Record to C. C. Champion

OFFICIAL ANNOUNCEMENT was recently made by the Fédération Aéronautique Internationale of the World's record for airplanes of 28,674 ft., made by Capt. C. C. Champion, Jr., U.S.N., on July 26, 1926.

Lieutenant Champion made this record in the Navy "Wasp" biplane. A Beech-type seaplane developed by the National Advisory Committee for Aeronautics at its experimental station, Langley Field, Va., was used in connection with the Wasp.

It is recalled that Lieutenant Champion, with the same equipment, established the World's altitude record for seaplanes when he reached a height of 27,895 ft. on July 4, 1927. These two major World's records have been brought back to America.

One of the most remarkable features of Lieutenant Champion's World's records has been his personal accomplishment. Several previous experimental flights to very high altitudes have been made by the aid of established land plane record. These flights were made for the purpose of making various statements, in his equipment. All his attempts were very much in the nature of record setting flying.

"Wasp" engine now holds three World's altitude records in various classes. It will be recalled that a standard Vought "Glide" equipped with a standard "Wasp" engine, holds World's records for altitude and speed, carrying a load of 500 lb. These splendid performances of the "Wasp" seem to bear out the contention that the air-cooled motor is an excellent for high altitude performance.

Find Weather Conditions Alright For Key West Seaplane Service

ESTABLISHMENT OF a seaplane service from Key West to the Coast Range and all Central American ports has been found entirely practicable from a meteorological standpoint, the Assistant Secretary of the Navy for Aviation, Edward P. Warner, has announced.

Investigations of weather conditions over this route made by the Hydrographic Office of the Navy Department, Mr. Warner said, have shown that the service could be established. The Navy has undertaken this research, it was explained, with a view of stimulating the inauguration of such a service by commercial interests.

The Navy has already received bids for about 25 PS 30 type seaplanes designed for such a service, and a contract for about 25 such planes will be awarded shortly. It is the object of the Department, to replace the last of the war-time flying boats now in service with new types of flying boats and that other designs for new craft have been submitted.

Aviation Correspondence Course Opened by Rankin Flying School

THE RANKIN Flying School, at Portland, Ore., has added a correspondence course in aviation to its curriculum. It is the first course of its kind in the Northwest. The school now has an enrollment of 100.

The newest member of the school's teaching staff is Edward L. Wells, United States meteorologist in Portland. He will teach meteorology. He retains his government position.

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Crash of the Focke-Wulf "Ente" Not Due to Aerodynamic Design

IN THE NOV. 14, 1927 issue of AVIATION there appeared an article describing the Focke-Wulf "Ente", the German plane of the curved type with the horizontal stabilizing and control surfaces in front of the main wing. In the article it was mentioned that Herr Wolf, designer, builder and pilot of the plane was killed while flying the "Ente". It has since been learned that the accident was due in no way to the aerodynamic design of the plane. The plane was perched with two engines, one on each side of the fuselage under the wing. It seems that Wolf was testing the plane with one engine stopped. In this position it was necessary to turn the horizontal stabilizer, which was so fixed, twisted around to an extreme position with its leading edge at an angle to the leading edge of the main wing. It is reported that while flying in this position that the other engine cut out. As Wolf was at a low altitude the plane came down to the ground before Wolf had an opportunity to swing the forward stabilizer. The landing was hard but the plane was not damaged to any great extent. Wolf was killed by a loosened belt striking him in the head.

Three Wasp Three Engined Fokker Planes for Western Air Express

THE ATLANTIC Aircraft Corp., Stoughton, Virginia, R. I., builder of Fokker airplanes has been awarded the contract for the construction of three large passenger airplanes to be used by the Western Air Express for service between Los Angeles and San Francisco. It will be mailed

that the Western Air Express recently obtained an agreement from the United States Express Fund for the Transportation of Merchandise. The plane will be in many ways similar to the standard Fokker F7. They will be powered with three Pratt and Whitney "Wasp" engines and will carry 12 passengers and two pilots in addition to 1,000 lb. of mail and baggage. The planes have been designed to have a high speed of 245 m.p.h. and a cruising speed of 120 m.p.h. The cruising range will be 500 mi.

The wing of the planes will be identical to that on the Fokker F7 and by Commander Byrd and Lieutenant Mail land and Hopschinger on their trans-oceanic flights. Due to the increased load the fuselage will be entirely different. The contract calls for the three planes to be delivered by April 1, 1928.

Lloyd Stearman Elected to Head Stearman Aircraft Co. of Wichita

LOYD STEARMAN, designer of the Stearman biplane, has been elected president and general manager of the Stearman Aircraft Company, which recently moved its plant to Wichita, Kan., from Visalia, Calif. Other officers of the company are "Red" Short, vice president; Walter P. Jones, Jr., secretary, and Harry Bellon, treasurer. Other directors are C. E. Henderson, J. L. Davidson and Ralph Middelkoop.

The voting trust agreement plan is being used in the administration of the company, the stock being deposited with three trustees who have authority over expenditures. They are Marcellus M. Murdock, Howard Wheeler and George M. Brown.

The Modern Pony Express

STEARMAN Mail planes are flying on the Varney Air Lines and the Colorado division of the Western Air Express. Each airplane is completing six thousand miles of strenuous flying every month.



The Stearman Mail Plane

STEARMAN AIRCRAFT HAVE A PERSONALITY

The Stearman Aircraft Co., Wichita, Kansas

Approve Incorporation of Four Pennsylvania Aviation Concerns

AT A meeting Dec. 12, the Pennsylvania Public Service Commission approved the incorporation of four airplane companies for the transportation of passengers and the loading of freight. The companies are the first chartered in Pennsylvania as common carriers by airplane.

The Gettysburg Flying Service, a subsidiary of the Potomac Flying Service, Washington, D. C., and the Reading Airways, at Reading Pa. were given permission to start operations at once. The Pennsylvania Aerial Transportation and Express Company, of Wilkes-Barre, and the Schick Aircraft Company, of Pottsville, were told they would be granted the necessary permission as soon as they are in a position to start operations.

The certificates of public convenience granted by the Commission to the four companies will terminate Dec. 6, 1929, unless renewed. The Commission ruled that all equipment, including airports, must conform to standards prescribed by the U. S. Department of Commerce and the State-Aeronautics Commission.

The companies also were told they would be required to carry liability insurance covering passengers and the general public. He made statements of their business and the number of passengers carried, and outline their engineering plans to carry similar to those in use. The Commission ruled that no additional stations must be established at such airports. The landing fields, the Commission ruled, must be more than open spaces where planes can land.

Regular service between cities and towns within the state was not provided in the four approvals. Before any company can establish routes connecting cities on regular schedules, additional approvals must be secured by the Commission, it was ruled.

Construction of Emergency Field At Fort Tilden, N. Y., is Approved

THE WAR Department has approved the project for the construction of an emergency landing field at Fort Tilden, N. Y., at a cost of approximately \$75,000.

The location of such a field at this point has several advantages. Fort Tilden is on the air route between Reading Field, D. C., and Midvale Field, Long Island, and the emergency landing field will make for safety along this route, so during storms and fog Midvale Field is often covered with a dense ground fog when Fort Tilden is free from fog. It will greatly facilitate anti-aircraft target practice at the station and will also avoid aerial spotting for the coast defense guns at Fort Tilden and Hamcock.

Representative Frothingham Seeks Regulation of Air Corps Exhibits

REPRESENTATIVE FROTHINGHAM of Massachusetts has introduced a bill in the House of Representatives to regulate exhibition flights by the Air Corps. It is provided that no exhibition flights to the public other than those under the control and direction of the War Department shall be made by the Army, and, if any authorized flights be given by Army personnel upon other than government planes, a bond of indemnity shall be furnished the United States by the parties desiring the exhibition in such sum as the Secretary of War may require to cover any claims that may arise for damages to persons or property.

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7. Improved Thrust Bearings.
8. Radial Ball Bearings to carry Propeller Load.
9. Double Oil Pumps - Pressure and Scavenging with Filter.
10. Oil Shapers on all Shafts to Prevent Leakage.
11. Latest type Ignition.
12. Rigger Smoothies.

Pushing completion of manufacturing arrangements in the United States, Mr. H. L. Brownback will remain at the ANZANI factory to supervise the production. American manufacturers are thus assured of the closest service in regard to delivery and all other details.

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AIRPORTS AND AIRWAYS

Philadelphia, Pa.

By Ray Krohn

With four passengers and a heavy load of baggage, Robert P. Harris, manager of field operations, for the Lehigh Valley Flying Service, Philadelphia Airport, left Belling Field recently at 7:30 P. M., and arrived here at 4:45, making the trip in 1 hr., 15 min. Major Howard P. Mohle, Jr. of Langley, also of Monroeville, N. J., and Mr. and Mrs. William Goss, of Lancaster, Pa., were the passengers.

Pilot W. J. Shaffer and mechanic David McManis, the latter on a mission in Philadelphia from the Gloucester Municipal Airport, Gloucester, N. C., dropped members attending the Legion Theatre over this city recently.

Sixty members of the University of Pennsylvania Aviation Club visited the Potters aircraft factory, at Bryn Athyn, and took flights at Potters Field, Hallowick, Pa. A. M. Banks and W. J. Shaffer did the piloting.

Jack B. Barlow, assistant manager of field operations at the Philadelphia Airport, flew a new Waco-30 from Washington to Philadelphia, the plane having been ordered by the Lehigh Valley Flying Service, airport owner, and sent as far as Washington by the Advance Aircraft Company. The plane was sold to Jack Goss, of Red Bank, N. J.

The first girl aviator student to make a solo flight in service Philadelphia was Miss Florence E. Melnick, of Tren-

ton, N. J., who flew by herself for the first time at Potters Field. A few hours before she made her flight, her brother, A. E. Melnick, made his first one. Both these students were under the instruction of A. M. Banks.

In the largest airplane order given by an aviation organization in the Philadelphia area, the Lehigh Valley Flying Service, owner of the Philadelphia Airport, has purchased 54 Waco-19's from the Advance Aircraft factory at Troy, Ohio.

The deliveries will start early this month, Charles Towns and Lehigh, president of the organization, has been advised. Two freight cars will be consigned to the Philadelphia Airport each month, with five dismantled planes in each car.

The Lehigh Valley service has rented a large garage on Tenthon avenue, near the Philadelphia Airport, to store the incoming planes. The company's two hangars at the airport are crowded with Lehigh Valley planes owned by Philadelphia, and additional storage space was required.

Some indicators of airplane sales at the airport are evidenced in reports for a period of two weeks, which show no planes have been sold by the Lehigh Valley organization. The 54 new Waco's will be stored until spring, the company having decided not to allow the wisdom of last spring, when dozens of prospective buyers attempted to secure immediate deliveries and many sales were lost, to come again.

A Consolidated PT from Baltimore was flown to the Phila-

delphia Airport recently by Lt. Col. Lyman H. Patterson, of Maryland National Guard, Pilot Quack and Brooks, Oakes Flying Corps, flew two Standard 21's from Trenton, N. J., to the airport to have engines changed. They were here three days.

With the landing recently of 1931-32 boundary lights around the 111 acres of the Philadelphia Airport, the Lehigh Valley Flying Service completed its 102,500 ft. long installation. The airport is now ready for night flying.

The boundary lights, 1900 volts each, are red, white and green. The red lights indicate dangerous landing spots or obstructions, such as the large drainage ditch running the field. A nearby high tension wire, the white lights indicate favorable landing spots, while the green lights denote obstructions, such as the landing area.

In addition to the boundary lights, the lighting equipment includes a 200 ft. long floodlight of 500,000,000 candlepower, equipped with an arc power plant on the field, floodlights on top of the two Lehigh Valley hangars at the airport, a flashing beacon that flashes the letter "P" in the Continental code each night, six illuminated cross-roads, and an illuminated sign bearing the words, "Phila. Airport" in large letters facing toward the city.

The lighting installations were started last June and completed in December.

The sale of Waco 30's to L. B. Cooper, of Bristol, Pa., Robert Greenstein, Jr., of Philadelphia, and Philadelphia, also of Philadelphia, has been announced by the Lehigh Valley Flying Service, at the Philadelphia Airport. The Lehigh Valley organization also has sold a Cessna plane, owned by the North Jersey Aviation Club, to Henry Williams, of North Jersey.

Boston, Mass.

By Donald Roddy

With six scheduled flights during the New England floods recently completed the Boston Airport Corporation found itself faced with the market submarine 5-4 of Providence the night of Sunday, Dec. 27. Chief pilot J. P. Billings noted his conclusion under the leadership of Jack Thibault, one of their best and they reported at the airport at the airport and worked until dawn to have no planes ready to fly at 4 A. M. Sunday morning.

The Army intercepts at Boston after an absolute lack of flight over the wreckage of their only PT in the Vermont flood work, have received two PT's, one from Hocking Field, which arrived early on December, and the other from Little Rock, Arkansas, flown in by Capt. C. W. Ford, Sunday, Dec. 27. The Army has for its regular at Boston one Yonkers, one old Bellanca, and one Douglas O-2. The airplane shortage situation was so critical that the Boston Yonkers report alone took the matter up vigorously and the Air Corps Reserve Officers Association, through Lt. Crawford Billings, contacted Assistant Secretary of War for Aviation F. Truitt Brown and finally secured the two incoming planes. The Navy at Boston has had single aircraft on hand constantly.

Devonian Airport at Atlanta, a Boston club, has almost shut down on its flying, its pilots being bound with planes in the new flying field at Providence and for expanded operations throughout New England contemplated for 1932 by the Devonian corporation.

Capt. Henry M. Brown, commander of the Boston Army for the past two years, is to be transferred to the West and sent March and Lt. Donald Deke of the army, at Boston, Washington, will become airport commander.

Major Ben Preston Brown, First Corps Area Commander at the Army, has been doing extensive flying since the floods.



The Columbia on its way to Germany

Years of Progress in A Single Year

THE aircraft industry has moved forward by rapid strides during the past year. A greatly increased demand for aircraft found the manufacturers ready. Ready, because the general features of airplane construction were already established, and engines and structural materials of proven worth were available.

Durham-Ten, the leading grade "A" airplane fabric was available for covering aircraft. It was used on planes that made historic flights during 1927 because of its already proven worth. The Fokker planes of Byrd and Mottled used Durham-Ten for fuselage and tail surface coverings. The Bellanca W-12, later known as the Columbia, was built in 1926 and covered with Durham-Ten. This famous plane broke the existing record for sustained flight and then battled the north Atlantic ocean as a flight to Germany.

American producers of aircraft who demand quality in every part of their plane use Durham-Ten. Among the names of this fabric are Martin, Curtiss, Douglas, Vought, Bush, Boeing, Terrell Air, Stearns and Cessna.



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In 1926, Colonel Benford has had a postgraduate course in flying service in each one of the way places on the Atlantic life-days and jobs.

The colonel will leave to take command at Selfridge field in the next two months.

He is a director of the Atlantic chapter of the National Aeronautic Association and has been active in the work of the chapter.

Havana, Cuba

By E. H. Miller

The Fisher airplane purchased by the Cuban Navy, arrived recently, and is at anchor at Truxena Navy Yard. This plane will be used as an auxiliary for coast patrol and inspection of Havana bays. Captain Landa, who brought it to the New Jersey plant, and flew it to Cuba, will continue in charge of the ship which bears the name "M. G. de Cuba". Captain Landa is well known to U. S. Army fliers, and is a splendid pilot.

General Herrera, Commanding officer of the Cuban Army, announced recently that plans to start a flying school at Camp Columbia Flying Field have been completed, and that the authorities at Washington have named an Army Air Mission to report to General Herrera about Feb. 1. Capt. E. B. Bean, now stationed at March Field, Calif., head of the mission, will arrive in Havana early this month. His junior officers, Lieut. James M. Gillespie and Jack O. Hodgson, now at San Antonio, Tex., with several experienced non-commissioned officers, will arrive later.

Several new planes will be delivered by that time to supplement the six or eight Army planes that arrived the October of last year, when several Spanish were washed and many new Wright's with Wright Whirlwind engines were destroyed.

Major Edward H. Brumard, piloting a U. S. Marine Corps Fisher 3-engine monoplane, passed over Havana at 9:15 A.M. recently. He was ferrying the plane to the Marine Corps in Washington, and dropped a note to Major Gillespie, senior officer Cuban aviation, at Camp Columbia Flying Field. It was learned later that he had considerable time looking around in the Caribbean, and it was too late in the evening for him to attempt to cross the mountain into Nicaragua, so he landed at Tela, Honduras, and finished his flight the next morning.

Fort Sill, Okla.

Fort Sill, near Lawton, is making preparations for an air force of officers and men to be stationed at the Oklahoma fort early in the spring. It is expected that at least twelve heavy-duty aircraft will be stationed there.

Fort Myers, Fla.

A standard training plane was purchased by the Pensacola Airways, Inc., and a class of eight students are now in training. The plane is being flown from the Ft. Myers Municipal Airport, which is being operated by the Pensacola Airways, Inc.

The Pensacola Airways, Inc., was organized and incorporated under the state laws of Florida. The officers are Philip A. Reff, president; Hugh A. Reff, vice-president; Ray E. Larson, secretary. Philip A. Reff is a lieutenant in the Army Reserve and also holds a transport pilot's license. Philip A. Reff was formerly chief test aviator at McCook Field. Ray E. Larson is an expert aviator of the Naval air service.

A. B. McElroy dropped in from Tampa to his West-30 and paid the Pensacola Airways a visit. While in Ft. Myers the idea of an Accredited Trade Association for the state was discussed. Mac made the return trip of 160 mi. in 90 min., making a stop at Stunetta. Many night riding trips above the City of Palm have been made and a number of visitors from the North have

January 2, 1928

look well pleased with a bird's-eye view of the surrounding tropical foliage. Weather has been ideal every day for flying.

Cincinnati, Ohio

By E. H. Miller

Walton Airport, Blue Ash, recently brought to a close the longest and most successful summer flying season it has experienced since its inception over six years ago. Beginning the middle of April, an aerial exhibition was given every Monday afternoon without intermissions until the latter part of November. The season's fine weather that provided on weekdays throughout the summer and fall enabled the pilots at Walton Airport to hang up this excellent record.

Hugh Watson, instructor for Travel Air planes for Ohio, who is O.E.S. pilot at Kew-Forest Woodman of Indiana recently. Two new O.E.S. Travel Aers arrived at Walton Airport, being flown in from Wadsworth by Green and Wynandale, both connected with the Travel Air Mfg. Co.

One of the recent non-country fliers to stop off at the airport was J. M. Anderson, who was a pilot of early biplane in the Middle West. Mr. Anderson has been from Indianapolis and kept his O.E.S. Travel Aer at the field for four days while he inspected his restaurant in Cincinnati. He reported for Louisville after finishing his inspection here. Hugh Watson, assisted by his brother Frank, spent over 10 hours in the air during November morning aerial photos. Several reconnaissance flights were made to obtain photos of colleges in nearby Ohio towns.

The Continental Airways Company, which has been awarded the contract for carrying the air mail from Louisville to Cincinnati, expects to begin operation about the first of March or later, as the government has finished flying the route. The northwestern mail plane will arrive at Walton Airport about 8:30 P.M. and it is expected that large crowds will drive in the evening early to see the mail plane land and take-off from the brightly illuminated field. Hugh Watson has been experimenting with a parachute device that will enable planes to drop off and take on mail without landing. If it proves successful it may be used in all places in rating down their flying time.

S. A. Lewis, assistant chief who has been at Walton Airport for several months, made a flying tour of Alabama and Georgia during December, including a visit at his home town of Birmingham. He expects to return to the airport sometime after the first of the year.

George Quillen, instructor, has added more than thirty-five students this year. He is still busy giving instructions, although the cold weather has cut the roster down a good deal. Quillen had the thrill of a lifetime recently when he made a "low drop" with a parachute landed by Serg. P. A. Bellmore, and parachute jumper, who has made nearly three drops at Walton Airport during the summer and fall.

Cincinnati voters voted approval of a new municipal airport when they voted in favor of a \$250,000 bond issue for that purpose at the November election. City officials are endeavoring to select a site for the new airport from the dead locations that have been approved for flying purposes. While the actual location is still uncertain, plans and citizens have been assured that the municipal airport will be one of the best in the country.

Milton, Pa.

The field at Milton is owned and operated by Paul Rebell. It consists of 50 acres and is on a highway between Harrisburg and Gettysburg. There is one hangar on the field and three planes are used by the owner to passenger carrying and flight instruction. At present the school has been temporarily suspended for the winter, but will resume in the spring.

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Lake Charles, La.

The city of Lake Charles, La., has just completed a new landing field.

The entire field, of about 60 acres, has been leveled and graded so that planes can land from any direction. There is a 100 ft. white circle in the center and a wind cone to the southeast corner of the field. Three different buildings in the city are marked with letters twenty by ten feet giving the name of the city and as arrows pointing to the field. The field is right on a main highway and is only one mile and a half from the post office.

The field was opened recently. Two commercial planes and three Douglas O-1s from Fort Crockett, Delmarco, Tex., were here for the exercise. The commercial ones were C. M. Dryden of Houston Airways, Inc., the new English-built biplanes, Tex., and the new English-built biplanes, Tex., which holds the distinction of being the first to fly in the English-built biplane. Dryden was flying one of his new OX-6 biplanes and Wood of Hume Engineering. Both planes did a good passenger carrying business and the flying machines gave the crowd a thrill with their formation flying.

New Orleans, La.

The city of New Orleans has a semi-constructed field, some miles north of town, on the main highway, with a 300 ft. strip of land running to the shore of the Mississippi River. One-half of the main field is now made and in addition to this there is a 2200 ft. by 300 ft. runway, extending from the main field to the highway.

When leveling and planning work is completed, the field will be 2200 ft. by 300 ft. A concrete floor is being installed in the hangar, a lighting system constructed and a dwelling house, with one large dormitory, where visiting pilots can be accommodated, is being built. Much will be saved at a nominal cost. An automobile will now be purchased to supply transportation to and from the field. There is no landing fee, and gasoline and oil are available, a mechanic being present at all times.

The field is owned and managed by the New Orleans Airport Commission.

Oakland, Calif.

Oakland Municipal Airport was designated by the Post Office Department as the western operating terminal of the Transcontinental San Francisco-Chicago air mail, express and passenger route, and the first scheduled plane took off from that field at 7:30 a.m. on the morning of December 12.

Since the first day of its operations on July 1, last season, Boeing Air Transport has had its terminal at Grant Field, except for a three weeks trial of Mills Field at San Francisco on the San Francisco peninsula. Grant Field was used by special permission from the War Department until such time as an airfield suitable for scheduled flying in Bay District could be found. Mills Field, though an excellent airport, was not considered suitable for scheduled flying because the air mail planes had to cross a 35-mile stretch of open water, sometimes flying under a low fog ending.

Pilot G. K. Vance, veteran air mail pilot, took off with the first scheduled mail from Oakland. Oakland chamber of Commerce and post office officials, Post Commissioners, seven or eight members of the Boeing firm, and newspaper men were on hand for the event.

Calipatria, Calif.

Calipatria is the latest city in Imperial Valley to establish an airplane landing field. A site has been chosen at the south end of the city which extends for a mile east and west.

January 2, 1933

Duluth, Minn.

The Industrial Promotion Committee of the Duluth Chamber of Commerce, with Julian M. Wolfe as chairman, has completed a study of the possibilities of establishing an airport at Duluth and in its tentative report recommends a field as close to the natural approaches of the city as practicable, with runways 5200 ft. by 400 ft. The report further states that the port should be located on the waterfront, accessible to transportation facilities, of a level, water-creating surface, with as few flying hazards as possible.

As a result of this investigation, a 65-acre site at the foot of Third Ave. West was selected. This field meets the specifications better than any other land site.

The Duluth News-Tribune sponsored a model flying contest recently, with the first trials held in the arena. Only two teams of a second separated the duration flight of Robert Rayman, the winner, and that of his nearest competitor, Ben Rayfield, of Chicago, the 1927 entered champion model flyer, was in Duluth for a week previous to the tournament to instruct the boys in the art of making and flying their models.

Baltimore, Md.

By Harry Frode

The Airport Commission of Baltimore has recently undertaken the work of selecting a permanent site for an airport. The fourteen locations that were under consideration originally have been narrowed down to three. A disputation meeting at Chamber of Commerce, chief organ of Baltimore, H. Stanley French, of the Baltimore Association of Commerce, Edward Bryant, of the Board of Education, Major William D. Tipton, commander of the air unit of the Maryland National Guard, and Harry C. Jones, representing the Post Development Commission, recently visited and inspected the airports at Cleveland and Duluth. They returned satisfied with the idea of making a similar, and probably better one in Baltimore.

An attempt will be made to induce airplane manufacturers to locate plants here, and this will be taken into consideration in selecting a field. At least one concern has already agreed the intention of establishing itself here. Among the advantages that have been set forth in the way access to the north and south, Baltimore being situated approximately midway on the Atlantic Seaboard.

Chicago, Ill.

By R. B. Stinson

New war airplanes are being wanted by the 1934 observation squadrons of the 3rd division, Illinois National Guard Division, has been presented in the spring, according to Lt. D. W. Westcott, commanding the squadrons in the 3rd division, an airport. Six of the planes will have Wright Whirlwind 2-5 engines and will be used for training purposes. The others will be Douglas observation planes with Liberty engines. At present the squadrons has five Consolidated PT-5 planes with Hispano 180 hp. engines.

Owens, Tex.

Only twelve men using airplanes in Southwest Texas are located here and at Fort Stockton. Vernon Gert in the plane in Owens and J. C. Devlin in Fort Stockton.

McGuire, Tex.

By Tom Addison

An airport is being constructed here for use of planes in service in the old field and those flying west from Los Angeles, to be that city, via El Paso. The land for the airport has been donated by Albert B. Burlew, former postmaster. Officials of the Texas Company have been using



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airplanes is flying from Houston to McCassey, and a number of operations in the oil fields have been making regular airplane trips. Among them are Bill Deanning and George Henshaw, of San Antonio.

Portland, Ore.

By John F. Anderson

John W. Allen and I. G. "Big" Hamilton of the Bell Air Line are making a survey of intermediate landing fields in Eastern Oregon, and studying interest in aeronautics. If conditions are right the line will probably start an air service between Portland and Baker, Ore., with stops at principal cities along the way.

The line has just bought a Spad biplane for use in school and advertising work. The plane has been used in San Francisco for sky writing.

Napoleon Duxtop, paper company employee at Coos Bay, Wash., has received an Bell Life air school.

Fargo, N. D.

All the planes have been put away for the winter to be overhauled, with the exception of one at the Hector Airport, which is in readiness to be used whenever there is a demand for its services.

Vernon L. Roberts, who piloted a Maconquester on the early of the Fargo Aeromarine Club in the New York to Spokane National Air Derby, has left Fargo for the winter months to accept a position with the Central States Aero Co. of Des Moines, Iowa, who is the maintenance of the light commercial planes. Roberts will return to Fargo in the spring to resume his activities at the Hector Airport.

The Homan Auto School is conducting a flying school with E. A. Canfield as instructor. A number of pupils are receiving their ground training at present, but the actual flying will not be done until the spring season opens.

Ed L. H. Berlin, vice president and general manager of the Northwest Airways, operators of the air mail route between Chicago and the Twin Cities, flew to Fargo in a plane piloted by "Speed" Helms.

The purpose of the trip was to study the territory over which they traveled, and the Hector Airport, as well as to confer with the municipal citizens as to the possibility of extending the air mail service to Fargo and later making Minneapolis the terminal of this route.

Buffalo, N. Y.

By Jack O'Hanlon

Levi Brock Nelson, of the U. S. Army, performed the civil test of testing three production planes in one day at the Buffalo Airport. The tests were all successful and on Saturday, Dec. 17, 1934, the planes were flown to Mitchell Field, N. Y.

Beloit, Wis.

Both the local American Legion post and the Beloit Commercial Club are co-operating in an effort to give Beloit an airport by spring. The Standard Oil Company intends to make the roof of its new warehouse with a standard aviation area identification sign. Large black letters will be erected so that the sign will at once be an identification and a direction indicator.

Kenosha, Wis.

A connection for the purpose of conducting flights and other aviation for printing an airport for Kenosha has been appointed by the president of the Kenosha Civic Council. The committee includes Elmer G. Heston, who was an ace in the air service during the war, and brings to the committee a knowledge of the technical things to be considered in the selection of a site for an airport.

Kahler, Wis.

By Robert Heston

A municipal airport at Kahler village is rapidly nearing completion, and when finished will be known as Brit Field in honor of Aaron Britts, research engineer of the Kahler Company, and well known Wisconsin pilot, who is supervising the work of the field. According to the "Kahler News," the field will be one of the most modern in the state, comprising an area of 34 acres.

A large marker will be placed in the center of the field which will be constructed in the form of a circle. A hangar, 3000 feet of finished construction, has been built adjacent to the field and will accommodate several planes, including Mr. Britts's new one, a Waco Express.

La Crosse, Wis.

By Robert Heston

Following the advice by the advisory council of La Crosse of refusing an airport for the city, La Crosse was abandoned as an intermediate landing point on the Chicago-Texas City Express line, according to announcement given to portfolio officials by the Rockport Airway, Inc.

Although trying for three years, La Crosse is today officially without an airplane landing field, for by a vote of 10 to 9 the council cannot throw out the proposal of the Silver Lake Company to sell an acre of 115 acres for \$30,000 plus lease for the year 1935.

Pacifica, Idaho

By Robert Heston

This town is not alone building for an air mail stop, when the completed new air mail line from Salt Lake City, Utah, to Great Falls, Mont., is established, but is so planning to support that an commercial plane can land on the Pacifica Flying Field with the maximum of safety.

The Aviation Committee of the local chamber of commerce is awaiting the arrival of J. F. Worthington, of the American Branch, Department of Commerce, who is expected in Pacifica soon. His final approval of the plans for the proposed enlargement and modernizing of the present field, where planes can land, or the securing of another field, is expected to be the signal for a release of a lot of associated activities.

The first thing planned to be done is to paint in white the name "Pacifica" in gigantic letters on a huge black roof, so that the sky may read.

Caldwell, Idaho

Inclement weather did not halt operations at the Caldwell air field, where workmen have started the erection of sheds and hangars. It is planned to push the contract to completion as rapidly as is consistent.

F. Day, manager of the airplane company, which is based here, already has started classes for students of aviation and Caldwell is now growing accustomed to having a plane war over their buildings.

Battle Creek, Iowa

The landing field used by Commercial Air, Inc., has an area of 50 acres and can be reached from any direction. It is 140 feet concrete slabs in the water, and the field is in the heart of one of the most modern when in Western Iowa. The land is owned by the field and it is only two and a half miles to the post office and two blocks from the railroad station and business district.

The hangar on the field is of heavy steel construction with a roof of corrugated iron. Gasoline and oil services are available, a bumper pile and pump system having been installed.

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only. Being unable to find any open space, they finally took a chance on landing in the desert outside the city, starting their craft with difficulty between two concrete beams by plunging through a hole in the fence.

A number hurried them to town and from there, the plane was rushed to the little airfield on a rough fifteen miles out of the city, to find, despite delays and handicaps, in a few days.

"We learned later the field had been shifted to the old site of town," said Burgess. "Our experience proved the vast importance of every city having an adequate landing field, properly maintained, lighted at night and supported. Already landed types are becoming more and more common before us, the plane having demonstrated its usefulness during the Mississippi floods and is undoubtedly single instance now. Many lives will be saved because of the speed with which equipment and medical supplies can be transported from supply point to stricken area.

"Every community should have a landing field and so that it is made 100 per cent useful and safe."

Audie from his pleasure at getting the news there is true. Lieutenant Burgess was present on Oct. 1st when Mr. McGraw, Jr., president of the Airplane Chapter of the National Aeronautics Association, gave a lecture to have a model presented. Lieutenant Burgess and other married recognition shows how and his company.

To Appoint Air Mechanics

The Office of the Chief of Air Corps is completing selection for the appointment of air mechanics, a rating authorized by the Air Corps Act of July 2, 1926, for which the necessary funds become available this fall.

Those selected men of the lower grades, particularly applicants in the grades required in the Air Corps, have been given an opportunity to take examination for the rating. The 4th air mechanics, first class, authorized for the fiscal year of 1928 are to be taken from the ranks of sergeant and corporal, 3rd and 2nd, respectively. The 82nd remaining of this job of 1,200, are to be given to 60 sergeants, 60 corporals, 30 private first class, and 30 private, these being known as air mechanics, second class.

The allotment of the ratings and the method of selection was prescribed by exact instructions from the War Department.

Navy Seeks More Pilots

The Department of the Navy has issued the following statement:

To provide for a substantial increase which must be made in the immediate future in the number of qualified naval aviators, the Navy Department has sent a letter to all ship stations requesting information concerning the pilot status for aviation. Training of all commissioned officers on the active list of the Navy of two or more years' service on July 1, 1928.

In the annual physical examination of officers, those whose medical examination report are without defects that would disqualify them for training at Pensacola in the naval control of aviation—those air craft, will be directed to report for examination for aviation training.

The object of this examination is to determine the physical fitness of officers for qualification as naval aviators and also to recommend officers for training as naval aviators who are desired by the Department. No officer will be ordered to instruction in aviation unless the officer concerned makes written application for it.

There are now 425 naval pilots on duty in the naval aviation organization of the Navy.

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Massachusetts

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YACHTS' CHERRYBROOK PLATING FIELD, Cherrybrook, Mass. (Yachts' Cherrybrook Plating Field) is now open for application. For more information, write to: Yachts' Cherrybrook Plating Field, Cherrybrook, Mass.

Minnesota

MIDWEST AIRWAYS CORPORATION
MIDWEST AIRWAYS CORPORATION, Minneapolis, Minn. (Midwest Airways Corporation) is now open for application. For more information, write to: Midwest Airways Corporation, Minneapolis, Minn.

Montana

HUNTER AIRPLANE COMPANY
HUNTER AIRPLANE COMPANY, Helena, Mont. (Hunter Airplane Company) is now open for application. For more information, write to: Hunter Airplane Company, Helena, Mont.

Nebraska

ALLISON AIRPLANE CO.
ALLISON AIRPLANE CO., Omaha, Neb. (Allison Airplane Co.) is now open for application. For more information, write to: Allison Airplane Co., Omaha, Neb.

Ohio

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SOUTHERN RUSTIC CO., INC., Cincinnati, Ohio. (Southern Rustic Co., Inc.) is now open for application. For more information, write to: Southern Rustic Co., Inc., Cincinnati, Ohio.

Oregon

CHERRYBROOK AIRPLANE COMPANY
CHERRYBROOK AIRPLANE COMPANY, Cherrybrook, Ore. (Cherrybrook Airplane Company) is now open for application. For more information, write to: Cherrybrook Airplane Company, Cherrybrook, Ore.

South Carolina

MANHATTAN AIRCRAFT CORPORATION
MANHATTAN AIRCRAFT CORPORATION, Manhattan, S.C. (Manhattan Aircraft Corporation) is now open for application. For more information, write to: Manhattan Aircraft Corporation, Manhattan, S.C.

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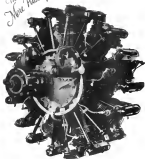
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